Annual Statistical Number

ELECTRIC RAILWAY JOURNAL

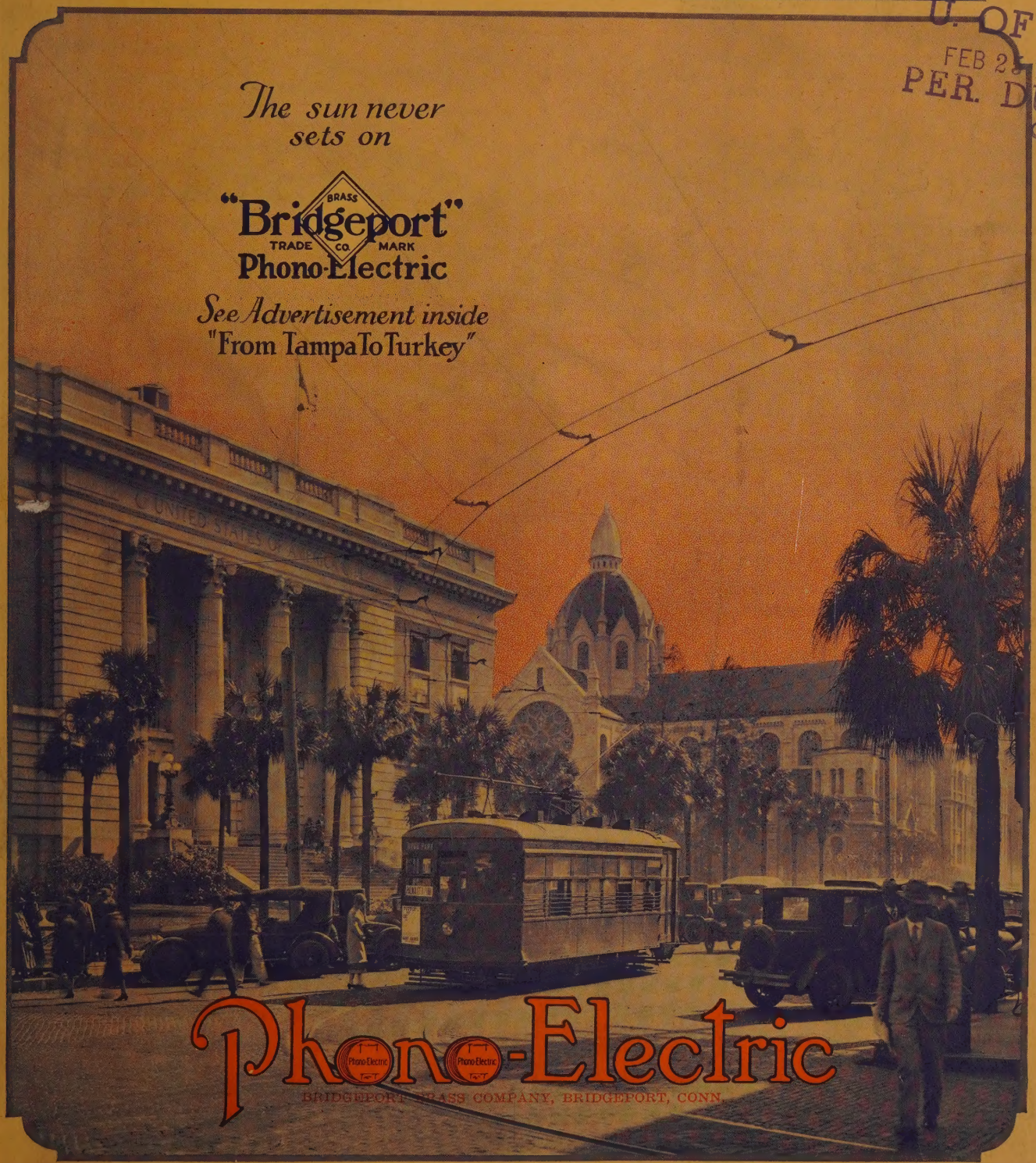
McGraw-Hill Company, Inc. January 2, 1926 Twenty Cents per Copy

U. OF ILL.
FEB 25 1941
PER. DUPS.
COPIES

The sun never sets on

"Bridgeport" BRASS TRADE CO. MARK
Phono-Electric

See Advertisement inside
"From Tampa To Turkey"



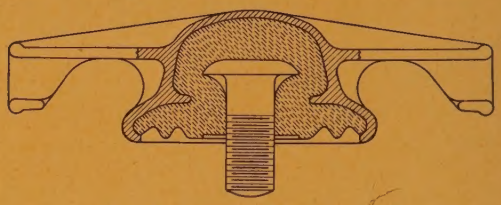
Phono-Electric
BRIDGEPORT BRASS COMPANY, BRIDGEPORT, CONN.

Tampa, Florida

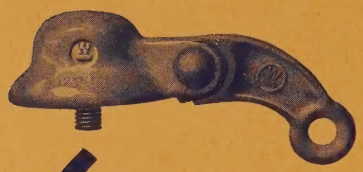
U. OF I.
LIBRARY

Suspensions

Westinghouse B Suspension
Styles 227032 and 227037
Straight Line



Showing method of holding stud
in body of B suspensions with
special insulating compound



Westinghouse B Suspension
Style 227144—Single-Curve with Arm

Westinghouse B Suspension
Style 227146—Double-Curve with Arms

Westinghouse B-1 Suspension
Style 300814, Straight-Line

Special Westinghouse Insulating Compound

holds the forged steel stud in the malleable iron body of Westinghouse B Suspensions.

The B-1 is identical with the B Straight-Line Suspension except that the stud is longer and is fitted with a lock washer held by a thin copper washer. This enables the trolley ear to be aligned accurately without "backing it off the stud," thereby always assuring a tight connection between the suspension and the ear. The lock washer will not become loose. The copper washer prevents the point of the lock washer from digging into the boss of the trolley ear, when removing the ear.

Westinghouse Electric & Manufacturing Company
East Pittsburgh Pennsylvania
Sales Offices in All Principal Cities of
the United States and Foreign Countries

WESTINGHOUSE ELECTRIC

MEMBER AMERICAN ELECTRIC RAILWAY ASSOCIATION AERA

1926

Westinghouse

X 85768

Electric Railway Journal

Consolidation of Street Railway Journal and Electric Railway Review

Published by McGraw-Hill Company, Inc.

MORRIS BUCK, *Managing Editor*

Volume 67 New York, Saturday, January 2, 1926 *Number* 1

A Year of Steady Progress

JUDGED in a material way, the electric railway industry has had a good year. Preliminary figures indicate that the reduction in riding during the early months was nearly if not quite made up in the summer and fall, so that the total passengers for the year will be little if any less than in 1924. With fares several points higher it is probable that the gross revenues will equal if not exceed those of the banner year of 1923. Operating expenses have changed relatively little, and with economies being practiced the net income for the industry should show a gain.

Faith in the industry is shown by the extensions of track, totaling 340 miles. This is greater than in any previous year since the war. New electrifications were 236 miles, also a record for post-war years. Track reconstruction lagged somewhat, but the total built and rebuilt and electrified was 1,156 miles, which is almost exactly the same as last year's record, which was the greatest since 1915.

SUFFICIENT attention was not paid to replacement of obsolete and worn-out rolling stock. Only 1,659 cars and locomotives were purchased or built during the year as against 4,092 the year before.

The financial situation has been very encouraging. Less difficulty was experienced in refinancing properties that could be regarded as sound investments. The lower requirements due to a smaller volume of maturities in 1926, will make financing materially easier this year. The receivership situation, which was at its worst immediately following the war, is rapidly clearing away. Although thirteen railways went into receivership last year, eighteen were returned to their owners. Two of the largest companies remaining in receivership are practically reorganized, so that they can be expected to resume corporate management early this year.

Most encouraging is the attitude of the railway systems toward the bus. The place of the two modes of transportation is being defined more exactly. Better still, electric railway managements in large number are awake to the necessity of using the bus to round out their systems. New buses to the extent of 2,171 were bought last year by electric railways—well over twice as many as in any previous year, and the companies having bus operation increased 80 per cent. Altogether, 280 companies are now running 5,358 buses.

DURING the year just closed more constructive work has been done with a view to placing the electric railway industry on a sound footing than for many a day past. Leaders of the industry, realizing the need for forward-looking action, have been planning wisely to get a better viewpoint than has existed in the minds of the operators and the public.

Of great significance is the forward move made by the American Electric Railway Association in the formation of the Advisory Council and the appointment of Lucius S. Storrs as managing director. Much work is ahead of him. Alone he cannot accomplish a great deal. He deserves the co-operation and assistance of every electric railway owner, every operator, and every manufacturer serving the industry.

FOR the coming year there is a great deal to be done. Indications are that it will be a good year in regard to revenues and expenditures. This should make it possible to carry forward the plans that have been made for revitalizing the industry so that it may render the greatest of service to the public.

Stabilized Conditions Should Make for Progress

STABILITY of electric railway operating costs continued throughout last year. Even more than in 1924 the index figures for the industry remained fixed. This is brought out by Professor Richey's article in this week's issue, in which he reviews trends of costs and fares over the past thirteen years. The wholesale price index fluctuated between the limits of 161 and 155.2, or only 3.6 per cent, as compared with 7.9 per cent in 1924. Electric railway construction costs fluctuated still less, or between 205.3 and 200.0, or only 2.6 per cent. Electric railway operating materials costs varied between 150.3 and 158.4, or 5.4 per cent. Wages while high, showed almost no change during the year, going from 221 to 223, or only 0.9 per cent. On the revenue side of the ledger fares were likewise almost stationary, going from 149.6 in January to 151 in October, or 0.9 per cent. However, they receded a trifle to 150.7 in December.

Last year this paper commented on the remarkable stabilization in the index figures as compared with previous years. The fluctuations of 1924 now appear almost violent as compared with those of the year just closed. Last year it was predicted that stabilized conditions would be continued. It was pointed out that the constructive and conservative policy being pursued by the Coolidge administration would make for business stability and hence for similar conditions in the electric railway industry. That prophecy has been fulfilled. With the experience of the past two years there seems to be no reason why it should not be repeated—that present conditions will prevail throughout the present régime.

Conditions such as this should make for progress. Live managements have it in their power to plan with confidence. There is no reason to defer improvements for fear of losing by failure to wait for a more propitious time. What should be done is to adjust operations to the present-day status, and to go ahead without fear for the future.

Record Breaking Bus Developments Mark Progress Toward Co-ordination

EXPANSION of bus service rendered by electric railways broke all records in 1925. While nearly everyone realizes from casual observation that this development has been fast and furious, its true significance is not so readily discernible. Figures show that between Jan. 1, 1924, and Jan. 1, 1925, the number of railway companies operating buses increased about 30 per cent and the number of vehicles slightly more than doubled. During the year just ended the number of railway companies operating buses increased approximately 80 per cent and the number of buses went up almost 120 per cent. New buses ordered in 1925 numbered more than 2,100 as compared with a total gain of some 2,800 in the number owned. Over 3,000 miles of new bus routes were established by the railways, while less than 300 miles of track was abandoned in favor of bus operation.

Careful consideration of the figures presented in the article on bus development published elsewhere in this issue leads to several important conclusions.

1. The increase in the number of vehicles being more rapid than the increase in the number of companies indicates that the experience of the railways operating buses has been satisfactory and that they are extending this type of service.

2. The large number of buses ordered during the year by the railways shows that they are making an energetic effort to provide high class modern transportation facilities.

3. The difference of more than 700 between the net gain for the year in the number of buses owned by electric railways and the number bought from the manufacturers shows that the companies have bought out many competing independents with a view to co-ordinating rail and bus services. Just how many buses were bought in this way is difficult to determine, but the number is considerably more than 700 because the number of buses junked during the year must be added to the figure mentioned above.

4. The mileage of extensions to bus routes operated by electric railways being more than ten times as great as the railway mileage on which the bus has replaced the car indicates that the existing transportation systems are spreading out to provide service to additional territory.

Encouragement for both the bus and the electric railway is to be found in this situation. Not as competitors but as partners in a joint transportation enterprise they are forging ahead. Co-ordinated service, long believed to be the solution of the transportation problem, made real progress during the past year.

The Public Judges a Railway by the Appearance of Its Cars

CONDITIONS which demand the earnest attention of the entire industry are evident as the result of a survey of the age of electric railway passenger cars. This nation-wide survey, made by ELECTRIC RAILWAY JOURNAL as a feature of this issue, is published on another page. Although mere age alone is of little significance, when viewed in the light of progress that has been made in design and construction over a given period, it becomes a definite index to the condition of the physical equipment. The past fifteen years have brought many fundamental improvements in cars. Previous estimates indicating 25,000 obsolete cars that are in condition to demand rapid replacement are now shown to have been very conservative.

Of much greater importance than seems to be generally accepted are the factors arising from the condition of the cars on a given property. It has been demonstrated on many roads that modern, attractive equipment has a direct effect on the volume of riding. That it helps to maintain regular schedules and to reduce delays and pull-ins is obvious. But it is not so generally recognized that such cars have a direct effect not only on the public's opinion of the railway but also on the morale of platform employees and on their general attitude toward their work. There has also been too little attention given to the reduction in accident hazard made possible by modern cars.

Many examples indicate that the increased earnings and reduced expenses that result from the operation of modern cars of proper design provide an attractive investment basis for financing. Car builders are ready and willing to finance new cars on attractive terms that literally permit them to pay for themselves. One large

car builder considers equipment trust paper so attractive that he carries it himself as a desirable investment. According to this same builder, no electric railway has ever defaulted on an equipment trust.

In the light of these conditions it is apparent that the industry has been backward in modernizing its equipment. To be sure, it has passed through a most severe period of operating handicaps and restricted credit. But many properties have spent relatively large sums for rebuilding and rehabilitating old, awkward-looking and heavy cars. There has been a tendency to act on the basis that a street car should last forever. Too little attention has been given to the effect of obsolescence on the general standing of the railway in its community. The public has been educated to look for improved design and appearance in transportation vehicles, and in many cities the nondescript and venerable cars suffer by comparison with the modern automobiles. Their appearance has been taken as symbolic of the general condition of the industry.

Much of the popular apathy toward measures for the relief and improvement of electric railway transportation is attributable, in part at least, to the impression of general obsolescence made by the appearance of many cars. The sooner these are replaced and removed from service the quicker will the industry move forward toward that era of renewed prosperity and usefulness which most leaders of thought foresee for the immediate future.

Tendencies in Car Design as Reflected by Statistics

ONE-MAN, two-man cars were bought in greatest quantities during 1925. This evidence of the continued popularity of this type of car is an outstanding feature of the statistics of new rolling stock purchases for last year. For city service one-man, two-man cars constituted 45 per cent of the total of new cars bought, and 14.4 per cent of the interurban cars were of this type. Cars arranged solely for one-man operation amounted to but 11.6 per cent of the total number bought for city service. The number of two-man cars was nearly double that of the one-man type but less than half the one-man, two-man cars.

These figures summarize the relative buying during 1925 of the three types of passenger cars used in surface transportation. The flexibility of the one-man, two-man type which can be operated by one man during off-peak periods and by two men in most congested service meets a long-felt want.

In regard to the size of surface cars, most of the demand was for a car about 44 ft. long and seating 48 passengers. In collecting data for this issue no attempt was made to assemble information as to structural details, but from descriptions of cars published during the year it appears that end entrance and exit cars have been purchased almost entirely. Arch roofs and "T" posts are universally used. Platforms are level with the car floor or with slight ramps and a single step between the roadway and platforms is used. With this type of construction 26 in. diameter wheels became the universal favorite in order to keep step heights to about 16 in.

In general, there have been no radical departures in car design during the last year from that put forward in 1924. Much attention, however, has been given to increasing attractiveness and providing greater comfort.

Large Mileage of Track Extensions Augurs Well for Future of Electric Railways

OPTIMISM for the future of the electric railways is the outstanding impression created by examination of the figures for track extensions made in 1925. New track built during the past year totals nearly 340 miles, more than in any other year since 1917. It would be difficult, indeed, to find more convincing evidence of the important place which the electric railway occupies in the general transportation scheme.

City track extensions were larger than for many years past, as were also the interurban track extensions. This was no sudden spurt to make up for delayed development, as each of the past four years has shown greater track extensions than the preceding twelve-month period. Expenditures for track construction in 1925, however, were not so large as they have been in some other years. This may be explained by the fact that many extensions have been in suburban territory, where the cost of construction is moderate, and also by the fact that part of the paving expense is now being borne by the municipalities.

That the figures for recent years are smaller than those of a decade ago should cause no uneasiness. In those earlier days the electric railway industry was still in a state of development. Today the need for rapid expansion is past, and a steady, healthy growth has taken its place. In fact, we now realize that not all of the expansion of earlier years was necessary or economically justifiable.

But that lesson has been learned. Extensions are not being made nowadays to compete with existing lines, nor to aid in the promotion of real estate ventures. They are made to fill real transportation needs, and only where the volume of traffic promises to justify the expense. Forced by the pressure of post-war high prices to scrutinize every expenditure with the greatest care, the electric railways have never cast off the habit. Yet they deem it worth while to continue building hundreds of miles of new track every year.

Let the pessimists weep at their own prophesies of impending doom for the electric railways. Unwavering confidence in the future on the part of the managements and investors is indicated by their readiness thus to increase the physical plant year after year.

Manufacturers Have Contributed Much to Progress of the Industry in 1925

WELL-GROUNDED satisfaction may be gained from the degree of stability which has marked electric railway equipment prices during the past year. While the general upward trend of economic prosperity has not affected this field directly, due perhaps to the policy of watchful waiting adopted by the operating companies in the matter of additions to equipment, nevertheless the industrial situation, viewed from the standpoint of the manufacturers, is not too somber in aspect.

Practically every business forecast assures a continuation of excellent industrial conditions in general for at least the first half of 1926. Prices are expected to remain fairly stable and there seems little reason to presume any variation from this rule on the part of railway supplies. In fact, it would seem, from the predictions for the current year made elsewhere in this issue by representative manufacturers, that a spirit of

confidence is shared generally in the ability of the industry to hold its own and slightly improve its purchases.

In the important matter of research and development work on new equipment the manufacturers have been far from idle during 1925. Regardless of the rather sluggish buying which characterized the past twelve months, the producers of railway supplies realized the necessity of further aiding the operating companies through improvements in rolling stock and equipment which would cut down operating costs and attract additional passengers. Hence the large sums annually expended in this direction suffered no material reductions.

It is interesting, in this connection, to note the particular forward strides which representative manufacturers themselves consider as having contributed most of value to the welfare of the industry. Among these were noteworthy reductions in the weights of city and suburban cars, the development of a practically noiseless street car and improvements in the efficiencies of gas-electric buses. Of more general application to transportation problems was the further perfection of oil-electric cars and locomotives.

Electric Railway Expenditures Again on an Even Keel This Year

CONSIDER the fact that the purchasing power of the electric railway industry in the last three years has had a high of $282,000,000 and a low of $262,700,000, a variation of less than 8 per cent. This indicates a most even trend of a business of truly large magnitude. The forecast this year is that $296,150,000 will be spent on new plant and materials for maintenance of existing plant, exclusive of labor. This is nearly 10 per cent greater than the average of the last three years.

Essentially, half of the enormous total will be spent for new construction that will require some form of financing. In recent years this has been a matter of difficulty that has been overcome to some extent through the issue of customer and employee ownership securities or through the aid of car trusts or temporary loans.

The remainder of the budget is that portion of the operating moneys required for the purchase of materials, repair parts and supplies used in the regular maintenance of the cars, tracks, buildings and other structures of the operating companies.

The electric railway industry is indeed one of tremendous proportions. Besides the operating forces necessary to utilize the invested capital and put to work the new money planned for the new year, there is an entire army of men immediately behind the front line ranks in the form of the manufacturers. It is the duty of this group properly to design, manufacture and market the products necessary for operation.

Each phase of these operations is an important element in the successful operation of the railways, and the work of design, manufacture and marketing of the supplies and materials is of as much importance to the purchaser as the market itself is to the manufacturer. This relationship is often lost sight of and is one that calls for the closest co-operation.

Certainly the record of these years and the promise of the new year go a long way to offset the gloom that crops up from time to time, either occasioned by a local company in financial difficulties or perhaps from certain sections of the banking fraternity that have some railway issue thrust back on their shoulders through failure to pay a return on a swollen capitalization.

Proper Balance of Financial Structure Essential

SENTIMENT among bankers toward electric railway securities is distinctly more favorable than it was two years, or even a year, ago. This is reflected in the article elsewhere in this issue. The most glowing sentiments, however, are likely to run to cover under the test of performance. It is not intended by this remark to convey the idea that there is any lack of sincerity in the opinions expressed, but merely to indicate that less fear is felt both among the bankers and the investing public about the future outlook for the electric railways and for the securities based on these properties as a lien. That might at first appear like a Pyrrhic victory, but actually it reflects the sentiment fostered by the many examples of electric railways revitalized in the last few years.

Bankers recognize fully the adverse conditions under which many managements have labored and appreciate the accomplishments in the application of engineering and managerial skill, but they agree with the committee which reported at the Atlantic City convention that the only way out for many properties is by the reorganization of the capital structure. The presentation of this report was one of the most noteworthy events of the year. To many, no doubt, the recommendations contained in it, particularly the one urging voluntary readjustment of finances, came as a shock, but it was a shock that was very much needed. The committee certainly did a business-like job. There is no need to reiterate all the points that the bankers brought out. It does seem advisable, however, to point out again the value of the car trust certificate as a vehicle for the financing of purchases of new equipment. A review of the record of the past shows the high regard in which such securities are held among the bankers, the car builders and the investing public. A great help in this connection will be the successful working out of the plans for interchangeable freight equipment now under way among properties in the Central West.

The talent is available on the operating side to carry on progressively, but an improper, antiquated and rigid financial structure is recognized by the bankers as a greater hindrance than an antiquated engineering structure or plant. In either case the management does not have tools sufficiently flexible and convenient to permit satisfactory operation. To the end that the bankers may be more fully informed about the financial problems of the electric railways the plea is made for co-operation among the members of the American Electric Railway Association in presenting data which would include a balance sheet as of Dec. 31, 1925, with a record of earnings and interest charges for the last five years as an indication of each particular trend and also an estimate of earnings and interest charges for the next five years, and a statement of the probable new capital necessary and the debt maturing within five years.

The time for response to this appeal is at hand. Banker co-operation with the electric railway industry and the constructive work that the bankers may be able to do depend very largely on the extent to which the various companies respond. It is not always true, either financially or otherwise, that he travels farthest who travels alone. The industry is bent upon developing the science of transportation. There can be no adequate development of this kind that does not take fully into account the place that proper financial balance in corporate structure plays in modern business.

Railways Plan to Spend $296,000,000 for Plant and Material in 1926

Purchasing Power of the Industry Shows Healthy Progress—An Increase of 11.66 per Cent Over Last Year's Figures Is Promised—Large Track Construction Program Is Included in Forecast Submitted by the 57 Operating Companies Furnishing Information

PURCHASES by electric railways for the new year promise to exceed those in 1925 by 11.66 per cent. ELECTRIC RAILWAY JOURNAL'S forecast for 1926 is $296,150,000. This is higher than the estimated actual expenditures for any of the preceding three years and is significant of the outstanding confidence in the permanence of the industry.

This is the fourth forecast of the purchasing power of the electric railway industry made by this paper. In December of each year it sends questionnaires to a number of large companies, in which they are requested to submit confidential figures showing the actual materials expenditures for way and structures, equipment, and power, divided between capital and maintenance accounts. Necessarily, the actual expenditures reported must be based on ten or eleven months of the current year, which, however, is generally quite accurate. The forecast for the coming year is based on the budget figures as actually prepared by those companies making replies to the questionnaire. There is a continual increase in the number of companies making returns. This year there was a total of 57 companies, representing most of the large companies and geographically well distributed over the United States.

An analysis of the accompanying table and charts based on the data contained in this table shows many interesting figures. Of importance is the trend of maintenance expenditures, which have steadily increased for three years and promise a further advance in 1926 equal to an increase over 1923 of nearly 50 per cent.

Expenditures for new plant and equipment in 1925 and the forecast for 1926 do not come up to 1923. The forecast for 1926, however, promises a substantial increase over 1924 and an even greater increase over 1925 of $25,000,000. While the increased use of the bus is responsible for a large part of this promised advance, it is a significant fact that expenditures for way and structures, largely new track, promise a marked upward trend in 1926 of nearly $20,000,000 over 1925.

Segregation of equipment expenditures into rail cars and buses is a new feature in this year's estimate. Expenditures for new buses and accessories by electric railway companies were more than $15,000,000 in 1925, or 23.8 per cent of the total amount spent for equipment.

"ELECTRIC RAILWAY JOURNAL'S" ESTIMATE OF EXPENDITURES OF THE INDUSTRY

New Plant and Equipment

	1922	1923	1924	1925	Forecast 1926
Way and structures	$85,000,000	$74,000,000	$56,000,000	$52,400,000	$72,000,000
Equipment	38,000,000	78,000,000	60,200,000	Rail..50,400,000	45,700,000
				Bus..15,680,000	22,750,000
Power	28,000,000	28,000,000	17,000,000	5,150,000	8,320,000
Total	$151,000,000	$180,000,000	$133,200,000	$123,630,000	$148,770,000

Maintenance Materials and Supplies

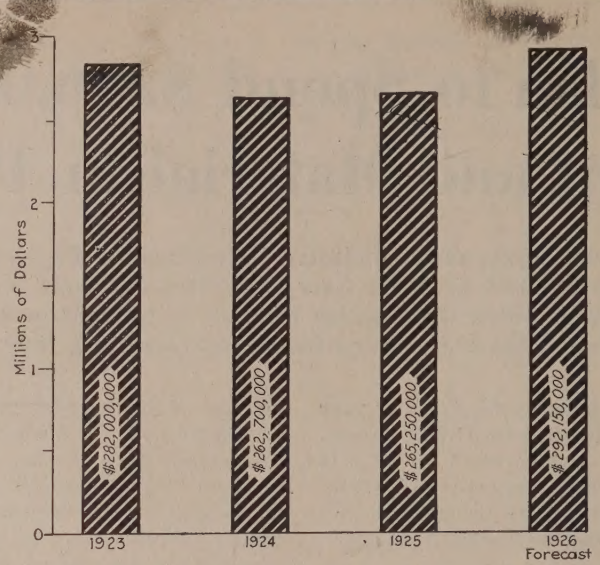
Way and structures	$42,000,000	$57,500,000	$56,900,000	$58,950,000
Equipment	44,000,000	54,000,000	Rail..54,700,000	54,000,000
			Bus...7,370,000	11,230,000
Power	16,000,000	18,000,000	22,650,000	23,200,000
Total	$102,000,000	$129,500,000	$141,620,000	$147,380,000

Total of New Plant and Maintenance Materials

Way and structures	$116,000,000	$113,500,000	$109,300,000	$130,950,000
Equipment	122,000,000	114,200,000	Rail.105,100,000	99,700,000
			Bus...23,050,000	33,980,000
Power	44,000,000	35,000,000	27,800,000	31,520,000
Grand total	$282,000,000	$262,700,000	$265,250,000	$296,150,000

In 1926 the expenditure for buses is estimated at nearly $23,000,000, or 33.2 per cent of the total estimated new equipment purchases in 1926. The combined expenditures for rail cars and buses have thus remained fairly constant for a period of four years, including the 1926 forecast.

Of peculiar interest is the marked upward trend of the estimate for new track expenditures in the 1926 forecast. For the first time in four years the track expenditures have forged ahead of those for equipment. One incentive for increasing line extensions, double-tracking, etc., is undoubtedly the relief of paving charges that many companies have succeeded in obtaining. With the coming of the new year further relief is expected from this antiquated form of taxation.



Total Expenditures for New Plant and Equipment and Maintenance Materials and Supplies

The purchasing power of the electric railway industry for materials and supplies, and new plant and equipment, equals nearly 30 per cent of its billion dollar annual income.

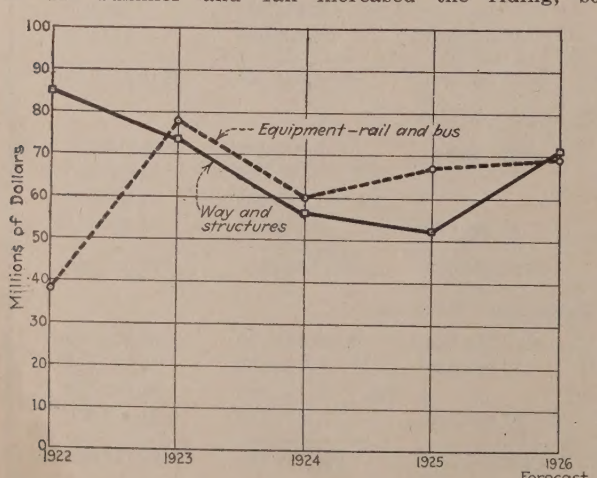
New plant expenditures in the power group show a marked falling off for 1925 and in the forecast for 1926. This is undoubtedly due to the increased use of purchased power as against power generation and denotes generally an economy in operation, although it detracts from this one angle of the purchasing power of the industry.

Without doubt there was an excess of optimism a year ago on the part of the railway companies reporting expenditures and budgets, which were used in making this annual estimate of the purchasing power of the industry. The excessive estimate for new plant and equipment was more than could be expected of a conservative growth. Early in 1925 there was a general recession in business all over the country. This naturally had its effect on the electric railway industry. In the early months of the year passenger traffic was off considerably. While improved business conditions in the summer and fall increased the riding, so that the total revenues for the year will equal those for 1924, the period for starting major improvements had passed. Consequently many companies showed a materially reduced program for extensions and capital expenditures from that they anticipated a year ago.

The estimated purchases of maintenance materials and supplies, however, were exceeded and indicate a tendency to put the house in order and to progress with new projects in an orderly manner.

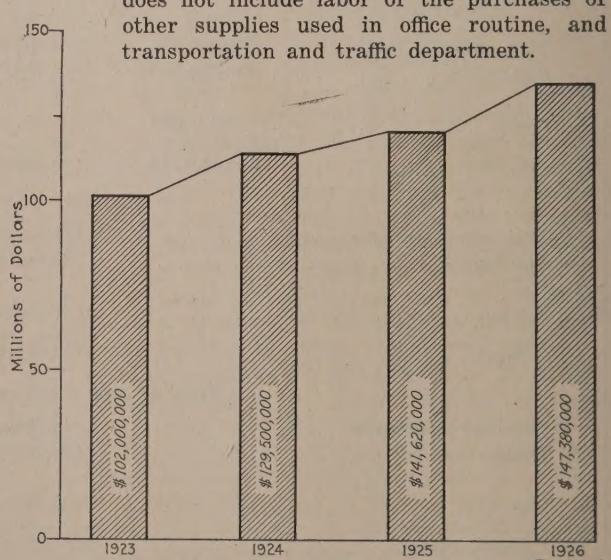
The method of making this forecast by ELECTRIC RAILWAY JOURNAL is similar to that employed in years previous. Essentially the same list of companies was requested to report expenditures for the year 1925 and the budget for the coming year. Some companies replied that they made no budgets, others replied that they weren't ready, and others just didn't reply. A great many of the companies, however, appreciated the importance of the estimate and made careful and prompt returns. Included among these are most of the large companies in all parts of the United States. The totals for the industry are interpolated from the ratio that the track mileage and operating cars of the reporting companies bear to the total of the industry.

These estimates do not include expenditures for new subways and elevated railways that are financed by the cities in which they operate. Likewise this estimate is far less than the actual expenditures for operating the properties as the estimate of maintenance materials and supplies is only for purchases of such materials, and does not include labor or the purchases of other supplies used in office routine, and transportation and traffic department.



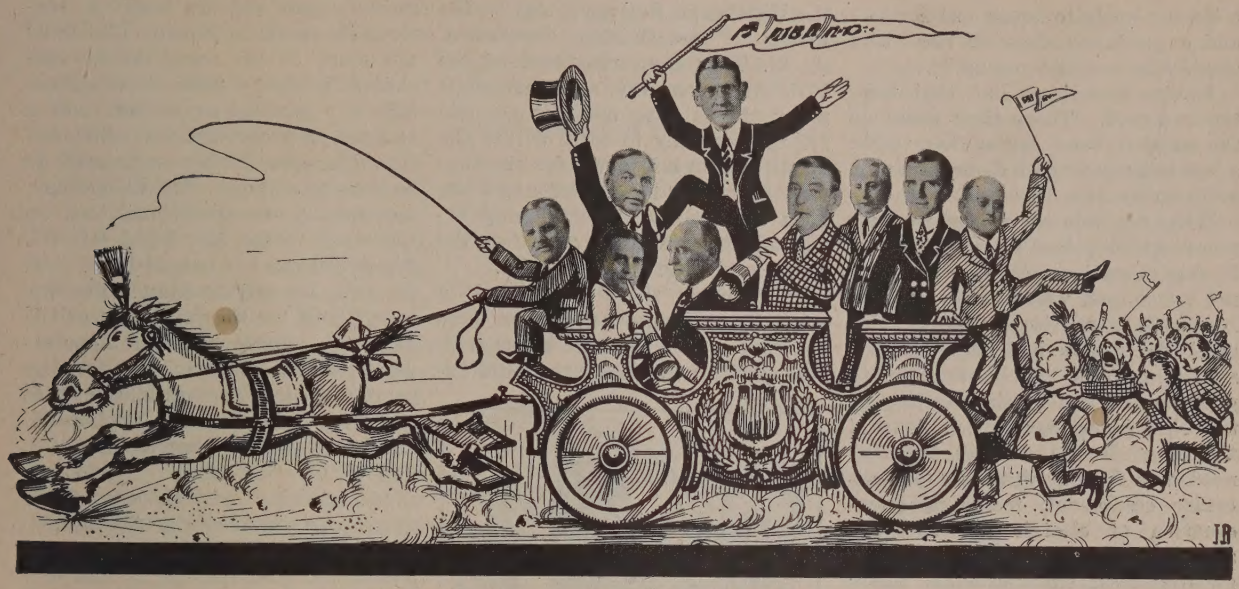
New Plant and Equipment

Analysis of purchases for new plant and equipment indicate that expenditures for way and structures will forge ahead of increased rolling stock purchases in 1926.



Maintenance Materials and Supplies

The steady increase in maintenance and rehabilitation expenditures is the greatest indication of the operators' faith in the industry.



Your Place Is on the Band Wagon Along with the Leaders

Fiction Has Nothing on These Facts!

Suppose You Went to the Door to Answer the Bell and Found a Conductor Instead of a Cop, What Would You Say?—A Science of Transportation Is Being Developed—If You Don't Believe It You Are Out of Touch with the Events of the Industry During 1925

By G. J. MacMurray
News Editor ELECTRIC RAILWAY JOURNAL

SIMEON FORD, the famous wit, said of one of his articles: "If this article, which is meant to be deliciously light and playful, appears to you to be fraught with an underlying varicose vein of gloom, do not hastily pass it by, but remember that it's in the interest of science." That sentence helps a lot. It certainly is a light and playful task to take all the outstanding events of the year in this industry and weave them together into a whole that will be as stimulating as is H. G. Wells' history of the world. But the vicissitudes of journalism are beyond divination. Science must be served. Mr. Wells can, perhaps, afford to be romantic rather then realistic, but I must be realistic in much that I write. All Secretary Welsh's men would call me to account if I treated playfully the statistics of the industry compiled by my good friend Edmund J. Murphy, who registered his *magnum opus* as an orator at the recent convention at Atlantic City.

All the adverse factors considered, there is cheer for nearly everybody in statistics published by the American Electric Railway Association in May which gave operating results on 370 companies, mostly the larger ones. Altogether their operating revenues in 1924 were $786,530,422, or approximately 1 per cent less than in 1923; the operating expenses in 1924 were $581,288,567, or approximately 0.6 per cent less than in 1923, making the 1924 net operating revenue $205,241,855, or approximately 2 per cent less than in 1923. The revenue passengers decreased 1.18 per cent. These figures are neither strident nor cacophonous. They are merely a delicate adumbration of sacred truth achieved by the association's cicerone of statistics. I have no desire to paint the lily or to gild gold. Let us pass on.

FACE TO FACE WITH THE PETRIFIED PAST

Far too often we find ourselves face to face with the petrified traditions of past periods. This is not a new situation in the electric railway industry. Heretofore this matter has been met by doing something drastic, very drastic—like passing a resolution. This year, however, the new Advisory Council, headed by B. C. Cobb, selected Lucius S. Storrs to develop a science of transportation which would result in bringing the members of the family into what Samuel Johnson might have called a consanguine conglobulation. The industry's birthstone might be the grindstone, but it at last came to the same conclusion as the vacuum cleaner, which exclaimed one day as it was pushed over the carpet: "I'm being played for a sucker." In other words the industry was like the man who slipped on a banana peel and executed a funny face, not being hurt, as it turned out, but having his dignity somewhat ruffled. When he recovered a moment later a friend was holding his hat and a number of people had formed a circle.

"What do these idlers want?" he snarled.

"They are not idlers," explained his friend soothingly. "Here's a doctor who wants to look you over,

a lawyer ready to bring suit for you and a producer of comic films who would like to write you up."

It was something like that with the railways. There they were, all the experts—one saying his traffic arteries were congested, another that his co-ordination was bad.

What the industry needed was not more doctors, but fewer of them. If expert advice were wanted, why not get a man who was an expert? And so it turned to Mr. Storrs. Not until Mr. Storrs had been in office several months did he attempt to prescribe. Then at the meeting of the New York Association he said that the electric railway industry needed to do four things: (1) Modernize equipment, including co-ordination of electric car and bus service; (2) inform the public regarding local transportation facts; (3) obtain greater co-operation among individual utility men for the general good of public service; (4) secure remedial legislation necessary to better service by open and above-board methods.

The Power Behind the Drone

This diagnosis provoked a lot of comment. But the comment of our contemporaries is not always constructive. It often is merely conversation. That's what much of the comment on the Storrs speech was —just conversation. It was like the remark emitted by Pat, in the hospital for observation after an accident. The house surgeon carefully examined the patient, after which he thus stated the case to the nurse:

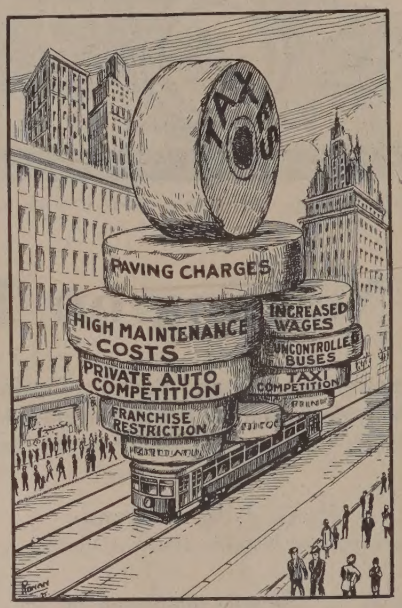
"As subcutaneous abrasion is not observable, I think there is little reason to apprehend tegumental cicatrization of the wound. What do you think yourself?" he asked Pat.

"Sure, doctor," replied Pat, "you're a wonderful thought reader. You took the words out of my mouth."

All of which may make Mr. Storrs the power behind the drone.

And so we enter upon the period of the renaissance of the industry. It is always difficult to fix the limits of any such period. For many companies it began years back, for others it has only lately begun, for still others it remains to begin and for the few it never will begin. These last will become the men of forgotten streets. The direction in which this industry is headed is shown by the material contained in briefs submitted in the contest for the Coffin award, won this year by the Pittsburgh Railways, and by the events of the October convention. A. W. Thompson, president of the Pittsburgh company, said that while many things have made it possible for the company to come within the requirements laid down for the contest, he believed its chief asset has been the successful partnership arrangement with the city for the operation of the trolley service.

Incidentally there never was a convention of the association that reflected so well the general progressive spirit of the industry as did the one last October. That isn't apple sauce, either. It led all others in accomplishments, in attendance, in exhibits and in the quality of the presentations by the committees and the various speakers. Freddie Dell, who always insists that things shall be just so, supplied the following final figures.



The Industry's Birthstone Ought Not to Be the Grindstone

Year	Convention City	Total Registration at Conventions	Square Feet of Exhibit Space Sold	Number of Manufacturer-Company Members
1921	Atlantic City	1,189	No Exhibit	225
1922	Chicago	4,200	61,895	244
1923	Atlantic City	4,404	75,681	274
1924	Atlantic City	5,804	86,349	330
1925	Atlantic City	7,147	100,030	371

The new president, Frank R. Coates, has a most likable personality and is a capable and progressive operator. Jack Shannahan, his immediate predecessor, made a particularly enviable record. This is all the more to his credit as he succeeded in office a man of very great talent, a prodigious worker and a rescuer of properties for which before his advent there appeared to be little or no hope. Mr. Shannahan, unassuming, unpretentious, took up the work where Mr. Budd left off. The torch was his to hold high. And he did. Largely to him is due the credit both for the formation of the advisory council and the appointment of Mr. Storrs. As for the general work of the association, that story was told at length by John A. Dewhurst in the issue for Dec. 12, page 1029.

In speaking of the convention there is no reason why the lighter side of it should be left out of consideration, just because it was discovered too late to do anything about it that one of the speakers had been vaccinated with a phonograph needle. The girls over at the association office, the Misses Sheridan and Kelly and the sprightly Mrs. Siebrecht, are wearing at work the smocks that were distributed on Carnival Night. In doing this they have set a fashion —created a style. But we are getting away from the point, as the shavings remarked to the pencil sharpener.

Develop the Science of Transportation

Don't think that all the good papers and all the good things were said at Atlantic City. It was at the midyear meeting that announcement was made of the real program of the association for the year and that Mr. Storrs had been chosen managing director. You will recall that Owen D. Young said at this meeting that "you have an industry, but perhaps you haven't an art; you have a trade, but perhaps you haven't a science, and I take it, it will be the business of your managing director to develop the science of transportation in your field." There were many notable sectional meetings. At the New York gathering Mr. Storrs laid down his program for the industry. Mr. Shannahan in New England spoke on broadening the work of the association. It was only one of a number of important addresses made by him. D. W. Snyder of the Illinois Traction made a notable address on merchandising transportation last April before the Illinois Association. In June interurban consolidation and

car design were the topics of the C.E.R.A. summer meeting—always a great event.

Again Mr. Storrs made a cheerful and constructive address. At this meeting of the C.E.R.A. John A. Beeler advanced his suggestion for the consolidation of the interurbans in the Middle West, with the construction of connecting links. Like all of Mr. Beeler's work he made it specific and the presentation entertaining. It was a big idea, this. To a limited extent the suggestion is being achieved by the Insull interests, who have the North Shore, the South Shore and other interurban properties extending as far south as Louisville. Meanwhile don't forget the good work done in rehabilitating the Buffalo & Erie Railway and the very excellent work on the Detroit United!

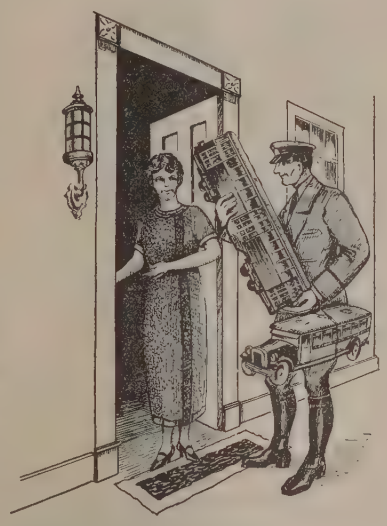
It's a Privilege to Demand Good Transportation

At the C.E.R.A. meeting, too, was the suggestion made by Charlie Gordon about the need for style in car design and the first intimation conveyed to the industry of the extent of the obsolete equipment which is now in service. This need for the installation of new equipment was driven home at Atlantic City and later by Mr. Shannahan in his West Virginia address. Many managers, far too many managers, are endeavoring to merchandise a product of the kind produced in 1900 or earlier. Is it any wonder that the public is reluctant to respond? And you will recall that George Kippenberger, now vice-president of the St. Louis Car Company, said that the car builder had very little choice in the matter. The manufacturer built to specifications. He sensed that in this day and age the passengers wanted something more than just to be handled safely. This is a reflection of the same sentiment to which Pete Witt gave expression at the midyear meeting to the effect that Pullman was the first man to sense the fact that the public wanted better transportation. As James H. McGraw said in "Charting a New Course" in the issue for Sept. 26, "It is a privilege of the people to demand better and better transportation, and for it theirs is the obligation to pay. Our duty is to serve in a manner worthy of our trust."

The extent to which the JOURNAL prints the proceedings shows the regard in which it holds all these efforts to bring out significant facts presented in the papers and in the discussions before national and sectional bodies.

Sir Galahad of Public Service

To borrow a phrase, the electric railway man should be Sir Galahad with public service as his Holy Grail. The equipment means little if its use is not sold intensively. That is just what is being done. Not only is service being advertised, but the street car and the bus are, metaphorically speaking, being taken



Selling the Car and the Bus Just as Other Commodities Are Sold

right into the home. The Toronto Transportation Commission asked its patrons by mail for service suggestions. So did the Key System Transit in Oakland and the Springfield Street Railway, Springfield, Mass. The Pittsburgh Railways sent a Christmas card to a selected list of its customers. In Grand Rapids, where so many progressive things have been done, L. J. DeLamarter organized a campaign in which his trainmen called personally on the ladies of the city with a message from the street car company. Imagine answering the front doorbell and finding a conductor there instead of a cop. Mr. DeLamarter wasn't content with this. He also staged his famous "Don't Worry" campaign. In an editorial early in the year the Philadelphia *Ledger* actually paraded the virtues of Mr. Mitten's motormen and conductors before the public of the City of Brotherly Love. Instance upon instance might be cited of this growing appreciation of the place of the railway in the community.

At the midyear meeting Pete Witt said he had ridden street cars in nineteen cities until he was sore but satisfied. In one of these cities Pete mistook the conductor for the fellow who greases the track. Pete's talk registered, all right, but what of the general transformation now going on? Think of the natty conductors of the Grand Rapids Railway, the Lord Chesterfields on the cars in Denver, the Beau Brummels who work for Bill Sawyer on the lines of the East St. Louis & Suburban Railway, which recently had its third annual clean-up of cars and crews! Forty-six men at East St. Louis received the maximum reward for their spic-and-span appearance; more than 100 others received a $5 bonus.

In Oil City, Pa., cars are being named for local pioneers. The Oklahoma Railway has purchased and fully equipped a model farm near Guthrie. Francis Wilson, one of the receivers of the Kansas City Railways, has been riding on his own cars for five years to learn what the public wants. All of which helps to get the community with you, as Tom Fitzgerald of Pittsburgh said. There the management recognized the truth of Lincoln's words "With public sentiment nothing can fail, and against public sentiment nothing can succeed." Last summer both the Brooklyn City Railroad and the Des Moines City Railway permitted women to smoke on cars. Instance upon instance, each notable in itself, could be piled up here as a record.

They Just Wouldn't Be Licked

Not only in what they are actually doing for the public are many companies setting a dazzling pace, but they are telling the world about it—they are emphasizing their own good points and bringing the good points of their city and their community to the attention of the public. Consider for a moment the little booklet, "A Texas Idea!" Five little utilities down in Texas, the kind that were hardest hit, just refused to be licked. One of them won the Coffin award a year ago, but the work of the others was equally notable. "A Texas Idea" was a classic.

It would of course be impossible to cite all the good advertising that has been done during the year. There is the noteworthy work of Labert St. Clair, effective and available to the entire industry. Guy C. Hecker made the editorial page of the New York *Evening Post* with "Now,

My Idea Is This." In addition to this there is a vast effort on the part of individual companies. An outstanding instance of this is the work of the Atlanta company. It made a great deal out of the fact that it permitted its patrons to have a voice in choosing the colors of the company's cars. It also did a whale of a job in advertising the new bus service. It just made the people of Atlanta want to ride.

Service Means Selling Freight on the Interurbans

The most important development in the interurban freight business in the recent past has been the establishment of through rates and joint transportation arrangements, not only between connecting electric lines but also with steam railroads and boat lines. Freight service offered by the average interurban line at the present time is largely confined to the handling of merchandise or package compartments. Little has been done toward the development of straight carload business. A few companies have established a pick-up and delivery business. During 1925 the freight business will return a revenue of about $65,000,000 to the electric railways.

The roads in the small cities are still having a great deal of trouble, but recognition seems to be growing of their essentiality. Witness the recent votes in favor of continuing the railways in Oskaloosa, Lorain, Port Arthur and Whitefish Bay as opposed to the substitution of the bus. The Gary Railway, under Insull management, has made a notable record, as has also the Attleboro Street Railway system, modernized and brought up to date as described by John A. Miller, Jr., in the issue of Aug. 29. Here, too, is the bus being co-ordinated with the railway.

Not all the riding is being done that should be done—or, perhaps, better could be induced, but the record, except in certain individual cases, is a progressive one. The latest United States census shows that in 1922 each inhabitant rode 116 times as the average. In 1890 there were only 32 revenue rides per inhabitant. The number of revenue rides is much greater in the cities. In 1922 they were 257 per capita, an increase from 109 in 1890. The per capita rides in the city of New York have increased from 218 in 1890 to 448 in 1924.

Right here don't forget the good work of the various public relations men and the heads of the State Public Utility Information Bureaus! These fellows, by and large, are doing a whale of a job. Nothing is more important than a public relations policy of the right kind. Public relations work must be done well or it had better be left alone. Altogether too many of these men occupy the rôle of attorney for the defense. Mr. Storrs says that too frequently is it the case that when the company's public relations policy is wrapped up and ready for delivery the public relations men are expected by hocus-pocus methods to have it received with enthusiasm and even with public applause.

Too Frequently the Public Relations Policy Is Wrapped Up Ready for Delivery

Give the Street Car a Chance

After all, the street car utilizes the surface street area more effectively for passengers carried than any other vehicle. Suggestions made by the committee on traffic congestion of the American Electric Railway Transportation & Traffic Association include abolition of automobile parking at all or specified hours at all points where it seriously interferes with the free movement of car traffic; establishment of one-way streets; establishment of boulevard stops at thoroughfares having car lines; some segregation of traffic; some regulation of pedestrian traffic; abolition of parades along or crossing streets required for heavy essential traffic; some abolition of left turns; establishment of safety zones, where electric cars stop to receive or discharge passengers.

The street cars furnish the low-fare rush-hour universal transfer service. The bus is a different vehicle. It offers a different service, and the price should be in accordance. No paper presented during the year aroused more comment than did that by Fred Buffe, general manager for the receivers of the Kansas City Railways. Reference to his remarks brings up the question of the use of the bus by the railways. JOURNAL figures elsewhere in this issue show that 280 electric railways are using 5,300 buses. In 1921, the records indicate that there were only 16 electric railways operating buses. In too many instances of the union of the railway and the bus it has been a case of miscegenation. The bride married with condescension, hoping that the bridegroom might rise to her level and never for a moment suspecting that hubby was already at her level if not above it.

In 1924 the largest single increase in the number of buses was made by the Public Service Railway, which added more than 500 to its equipment. Second in number of buses acquired during that year was the Northern Ohio Traction & Light Company, and third, the Pacific Electric Railway. Notable additions were made by all of these companies in 1925 and by the Cleveland Railway, the Kansas City Railways, the D. U. R. and at Atlanta. In Philadelphia alone 200 buses operating over seven routes have been put in service by the Philadelphia Rural Transit Company, a subsidiary of the Philadelphia Rapid Transit Company. There is little need to do more than mention Mr. Mitten's purchase of the Philadephia taxis.

Early in the year the Supreme Court held that the regulations which state commissions could exercise over interstate buses was very limited. Previously the Interstate Commerce Commission had declined to exercise control on the ground that it was without authority. As a result, unregulated interstate buses are competing with common carriers, long under governmental control. Action to regulate these buses impends in the bill now before Congress.

The bus as a topic should not be dismissed without mention being made of the notable eleven-page article by Morris Buck and Carl W. Stocks on transit conditions in St. Louis. The authors went over the entire ground, covering competitive opera-

tions in that city. This was the first time that the full story had been told. It was an unbiased analysis of the present situation in St. Louis and the events that led up to it. Adoption of a standard classification of accounts for bus companies also is of interest.

Low Fares for Short Distances

While the uniform fare with free transfer remains that most generally employed in urban service, there has been a tendency on some lines toward lower fares for the very short distance rider and the very frequent rider. Conspicuous examples of the former practice are in Boston, where the local rider in the suburb pays 6 cents instead of 10 cents, the fare if he uses the rapid transit system; the Public Service Railway of New Jersey, which has 5-cent zones, generally coincident with city boundaries, and San Diego, which has an inner 5-cent zone and an outer 5-cent zone. In general, transfers are not given when only 5 cents is charged. The most conspicuous effort to give fare concessions to the frequent rider is through the unlimited ride weekly or Sunday pass.

Notable Franchise Negotiations

On April 7, by popular vote, Chicago turned down the plan for a unified transportation system. The approximate cost of the entire system was to be $720,902,000. By vote on April 7, Milwaukee rejected a proposed service-at-cost contract between the city and the Milwaukee Electric Railway & Light Company. The most important new franchise adopted during the year was that by the Cincinnati City Council, which was passed and accepted by the Cincinnati Street Railway. It went into effect Nov. 1, 1925. It is of the service-at-cost type, with a fare control fund having a low limit of $200,000 and upper limit of $600,000. As part of this plan the Cincinnati Traction Company passed out of existence and Mr. Schoepf, its head for 25 years, withdrew from his local activities. More than 300 employees who served under Mr Schoepf are carrying watches as a reminder of his largess. The committee of the Massachusetts Legislature on Dec. 15 recommended an extension of the public control act of the Boston Elevated Railway for a period of 30 years. Last May the JOURNAL said: "Mr. Doherty Puts It Up to Toledo." In November Toledo appears to have reversed the process in the Riggs report, although it is not yet clear whose problem it is. Anyway Professor Riggs suggests a new deal there. This report was immediately passed over by the Council without comment to its committee on railroads and telegraphs, with which body it now reposes.

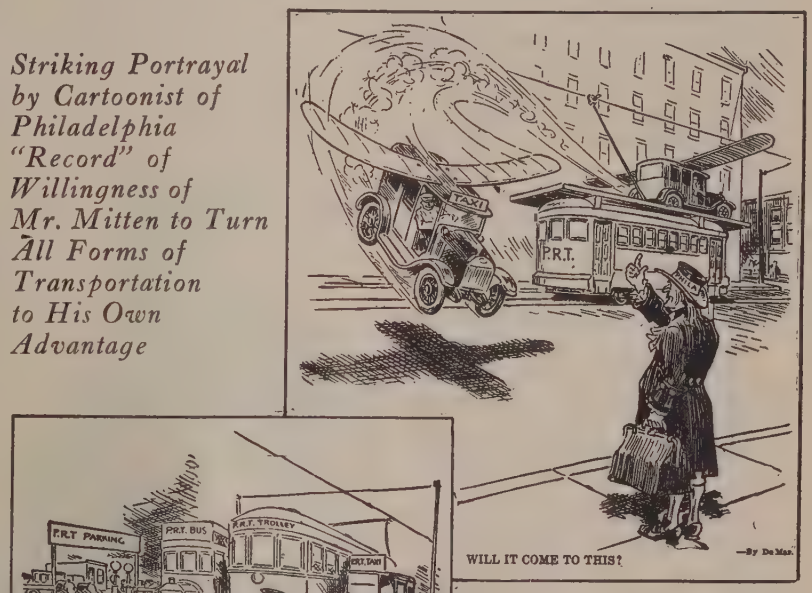
The large number of automobiles on the street has greatly increased the problem of accident prevention. While accidents which occur in boarding and alighting and from causes other than in connection with automobiles have decreased, those in which automobiles are involved have in many places increased. In consequence, a number of companies have embarked in extensive safety campaigns by the education of their employees and pleas to motorists to help prevent accidents. With the employees, competitions between divisions have been arranged that are intended to promote the best safety results. The co-operation of the public has been solicited in many ways, as through encouragement in the organization of local safety councils and safety campaigns.

As a further inducement to employees to make good safety records 31 electric railways in the United States now use bonus plans of one kind or another. Railways have much to gain from the results of the conference on street and highway safety, initiated by Secretary Hoover. One of the latest announcements made is that the Louisville Railway is prepared to offer substantial cash awards for safety work and to send the most successful candidate among its employees to the convention of the American Electric Railway Association.

In New York Barron Collier conceived and carried out an elaborate safety parade with the hope of bringing home to the public the message of safety. In this parade memories were revived of the days of the horse car and the hoop skirt in several of the floats. These days of long ago were also revived to the residents of Paducah, El Paso and Salt Lake City by parades held in these cities, but the demonstrations were not made in connection with safety work.

Chicago has been studying the feasibility of subways for thirteen years and has spent $821,459 in surveys and reports—and not a spadeful of earth turned yet. Activities of the Detroit Rapid Transit Commission during the first few months of 1925 were directed largely toward securing from the state legislature

Striking Portrayal by Cartoonist of Philadelphia "Record" of Willingness of Mr. Mitten to Turn All Forms of Transportation to His Own Advantage



authority to permit the city to proceed with the rapid transit system such as the city may elect. Los Angeles opened a short rapid transit line on Dec. 1. Much talk is heard about subway digging in smaller cities, but usually the economic obstacles to creating a self-supporting system in such cases appear to be nearly insurmountable. Perhaps the two most notable traffic surveys of the year were those by Mr. Beeler in Atlanta and by McClellan & Junkersfeld in Washington.

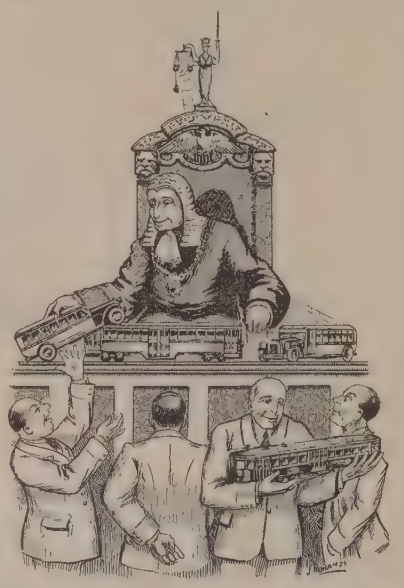
Manufacturer co-operation has always been given willingly in the electric railway industry. This is especially true at the present time. One of the notable contributions during the year was the study made by Victor Angerer, vice-president of William Wharton, Jr., & Company. On his own account Mr. Angerer made a survey of the industry, the result of which he later permitted to be made available to the industry through a comprehensive article published in the JOURNAL for April 4, page 533. There was the usual Wickwire contribution at the Atlantic City convention. Also on that occasion Charlie Peirce came out of hiding as a speechmaker and made impromptu at a Transportation & Traffic Association session one of the best talks of the whole meeting.

Mr. Peirce knows a lot about the business. He ought to. He has been in the selling end for 35 years. He didn't come to pose as an expert—a plain ordinary man away from home. Not only did he agree with Mr. Queeney about taxicabs in Philadelphia, but he would even supply the public roller skates if they wanted them. His idea was to get the gross up and then take care of it. He had no sympathy with cheeseparing. A salesman all his life, Mr. Peirce defied any man to continue selling anything, transportation not excluded, that was not made attractive.

SOME SIGNIFICANT LEAVE-TAKINGS

In the political arena there were a number of significant leave-takings. New York took leave of Mayor Hylan. He was eliminated in the primaries following the condemnatory report presented by Governor Smith's special commissioner who placed the seven-year delay in subway work at the Mayor's door. In this report the New York Transit Commission was exonerated. James F. Jackson, chairman of the board of trustees of the Boston Elevated Railway, resigned, due, as the *Transcript* put it, to "the summary treatment of the trustees by the Governor in his statement threatening them with discharge if they 'permitted' a strike of the car men." In the stand that he took Governor Fuller virtually reversed the policy of the trustees. Later the Governor reversed his stand.

Out in Detroit Mayor Smith paid his political respects to Ross Schram, manager of the Detroit Municipal Railway, by instructing the local Street Railway Commission to dismiss Mr. Schram and to remove I. N. Merritt as auditor. Mr. Wilcox resigned about the same time as claims attorney for the railway.



Belated Justice in New Haven Case—Much Too Often Scales Are on the Eyes of Justice Instead of in Her Hands

Speaking of the municipal systems the city of San Francisco rejected at the recent election the purchase proposal under which the Market Street Railway would have been taken over. Incidentally, the San Francisco Municipal Railway was operated at a loss of $295,230 for the year ended June 30, 1924, the latest official figure available. The excess of income over operating expenses and reserves actually was $8,374, but this figure took no account of taxes and similar items amounting to $303,604. This is a commentary on the inadequacy of the 5-cent fare. On the other hand, Seattle piled up a profit of $557,243 for the year 1924 compared with $169,636 in 1923. This was done under the 10-cent cash fare with three tokens for 25 cents, a rate reached after experimenting.

The politicians, led by Mayor Schwab of Buffalo, have certainly kept Mitten Management from attaining the rehabilitation of that property. Little attention was paid locally to warnings about the inadvisability of allowing a 5-cent bus company to compete with the International until a disinterested committee reported adversely on the proposition. The politicians of St. Paul and Minneapolis have finally seen the light and have entered into an arrangement with the railway for a settlement that could have been effected just as easily at the inception of the controversy had the men elected locally to public office assumed a different attitude. Because public authorities kept their eyes on political expediency and not on economic needs a decree was entered in 1914 requiring the New Haven Railroad to sell its New England trolleys. These now go back to that property under the decree of Judge Winslow rendered on Nov. 21. Meanwhile, however, the Rhode Island lines passed into the hands of a receiver and so are lost to the New Haven at a cost of many millions of dollars and no benefit to the public. In Pennsylvania the Supreme Court overruled the removal of Public Service Commissioners Benn and Shelby, summarily dismissed by Governor Pinchot last August during the progress of the Philadelphia Rapid Transit fare hearing. Much too often, however, scales are on the eyes of Justice instead of in her hands.

During the year the courts and commissions upheld the use of one-man cars in Buffalo, Milwaukee, Dayton, Worcester, New Haven and Nashville. Public Service Railway of New Jersey is now operating practically 100 per cent with one-man cars.

And so this desultory account has run on to the extent of six pages. But Montaigne very aptly said that "the world is nothing but babbling and words," after which he himself went babbling. Remember that the great Burke, frightened by the thunders of change all about him, turned back to the past, while Thomas Paine, thrilled by the same thunders, saw a dawn and proclaimed a hopeful future. The harder the conflict the more glorious the triumph. A better outlook depends in a large measure on a better lookout. When it puts away discouraging prophets this business will put away encouraging profits.

Issues of Merit Easy to Sell

Total of Financing in 1925 Not Large Compared with Recent Years, but Companies with Good Operating Records Experienced No Difficulty in Finding a Market for Their Issues at Reasonable Rates—Need Is Imperative for Recasting Many Financial Structures

HOUSES of issue which in recent years have sold electric railway bonds to the public report that issues of real merit are much easier to sell to the public than were similar issues two years ago. Unfavorable sentiment which existed for a long time is no longer as evident as it was. This is attributed to the general improvement in the railway situation, but more particularly to the eradication from the mind of the public that the bus is destined to replace the railway. This change in sentiment is due to the publicity that has attended the willingness of the railways to turn the bus to their own advantage.

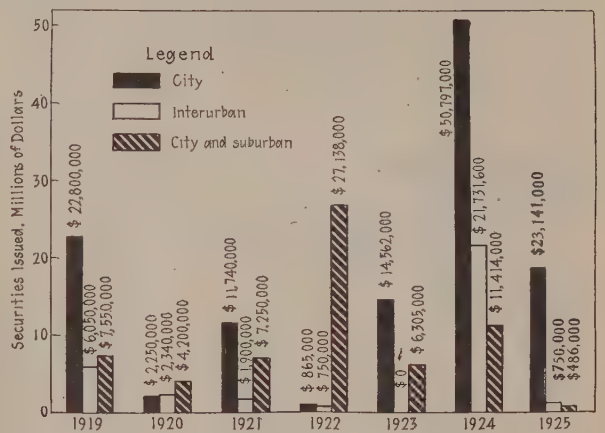
In this connection investment bankers point out that the situation in the electric railway industry as regards competition and changes in the fundamental aspects of the business have not been very different from similar conditions with which industrials have had to contend. There is, however, this notable exception, namely, that the industrials are not subject to the service restrictions which have been placed on the railways with respect to the conditions under which the two function. The railway that has found a solution of the bus problem is, of course, in a much better position to do its financing on better terms than is the company which has not solved that problem. In fact, new financing is approached by the banker on the basis of such solution having been found.

Over and over again bankers referred to the report of the advisory committee on electric railway finance, presented at the convention of the American Electric Railway Association, as stating concretely their attitude toward the whole problem. As they see it, the problem is one in which a proper balance must be struck among the engineering, operating and financial sides of the business. It is notorious that most electric railways are badly financed as regards the proportion of the bonded debt to the fair value of the property. The feeling of the bankers is that until the recent report was presented at Atlantic City nobody had suggested any remedy for the railways except more business. More business is highly desirable, but it is realized by the bankers that no amount of merchandising or skill in operation will correct a financial situation that is inherently unsound.

The thing to do is to clean house. This seems at first severe, but is it? Eventually the situation becomes untenable. It becomes untenable because the cost of new money exceeds the return on it that can be earned. Money costs vary with the hazard that is involved. Thus to a company that is earning its interest twice the cost would be 6 per cent. With a lower earning ratio the cost goes up on a constantly increasing scale to the point where it would be 10 per cent if interest were earned only 1.20 to 1.35 times. In other words, as the bankers point out and as the committee has emphasized, where a company is earning only a small margin over fixed charges, three important factors militate against it:

1. Where money can be raised at all for necessary capital expenditures, it can usually be done only at a cost greater than the return the money is likely to earn.

2. Where the operation is a refunding one, the new obligations, not even considering the general state of



Securities Issued Have Varied Widely from Year to Year as the Demands Have Changed

Details of New Bond and Note Financing in Amounts of More than $200,000 Offered Publicly During 1925

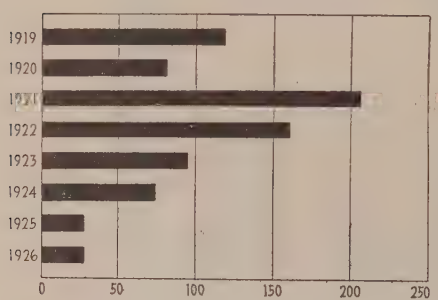
Issue	Price	Maturity	Yield	Amount
JANUARY				
Brooklyn City Railroad-Equipment Trust Certificates	.....	1926-35	4.50-5.50	$3,750,000
Chicago, Aurora & Elgin Railroad 2-year 6½ notes	100 and interest	1927	6½	750,000
Reading Transit Company first and refunding gold Series A 6's	98 and interest	1954	6.15	1,250,000
FEBRUARY				
Eastern Mass. St. Railway Refunding Mortgage Series A 4½	.....	....	7.0	(block)
Worcester Consolidated Street Ry. 1st and refunding gold 4½'s	.....	....	....	2,116,000
MARCH				
Philadelphia Rapid Transit gold 6's	99 and interest	1962	6.06	8,975,000
JUNE				
Norfolk & Portsmouth Traction First Mortgage 5's	98½ and interest	....	....	486,000
AUGUST				
Gary Railways First Refunding 6½'s	96 and interest	1945	6.75	550,000
OCTOBER				
Cincinnati Street Railway 1st 6's	100 and interest	1928	6.00	4,500,000
DECEMBER				
Chicago Rapid Transit Company first and refunding mortgage 6½'s	95 and interest	1944	6.98	2,000,000
Total				$24,377,000

the money market, will bear a higher rate than did the one maturing.

3. Companies in either of these positions, even if they are able to borrow on a mortgage, will not be able to raise any new capital by the sale of stock.

There is no blinking the facts. There has been considerable financing of electric railways during the last five years on terms that were very favorable to the borrowers, but these instances were by companies strategically situated with favorable records of earnings in the past and under management known the country over for its progressive attitude. For the others the only way out, except at terms in themselves prohibitive, is by revamping the capital structure. The bankers have said quite definitely that an improper, antiquated and rigid financial structure is usually a greater hindrance than an antiquated engineering structure or plant. In either case the management does not have at hand tools sufficiently flexible and convenient to permit satisfactory operation.

It has been said before that a situation similar to that in the electric railway field has existed in other industries. It has. Witness the high rates paid only a few years ago by industrials with good credit ratings for the new money they needed. Because of their strategic earning position, however, many of these companies have refunded the issues so put out, paid some of them in part or paid them in full. The very nature of the utility business does not permit a surplus to accrue that makes it possible to retire issues either in part or in full out of earnings. There is all the more need for some managements resolutely to face the facts and to put their financial houses in order. Voluntary readjustment is never easy to accomplish. The recent case of the Detroit United Railway is an instance in point. That road appears to be working out its own salvation under receivership, but the stockholders with the prospects before them of an assessment of more than $30 a share to protect an equity appraised market-wise at $4 a share did not consent to the levy in numbers sufficient to keep the property in their own hands.



Maturities in This Year Are Less Than at Any Time Since the War

So far as the maturities for the new year go, they total $26,644,790 compared with $28,224,000 in 1925. Incidentally this table of maturities indicates the rates at which financing was done 25 or 30 years ago under favorable economic conditions, with paving and franchise terms not then onerous and with wages averaging about 21 cents an hour compared with about 65 cents now. The contrast is a striking one. As for the amount of bonds now in default the total of about $200,000,000 appears to be imposing, but it is not so when the conditions of the last few years are considered and the figure is weighed in the light of the total of $6,000,000,000 invested in the industry. Even allowing for the roads that have come out of receivership recently the list shows strikingly the type of road hit hardest.

In one respect banking opinion appears to be divided. That is on the equipment trust. It is agreed that so far as freight equipment is concerned the ability of the companies to borrow against such equipment would be helped materially by standardization of design such as

Seven-Year Record of New Electric Railway Financing Involving Bond or Note Issues of More than $500,000

	City Railway	Interurban	City and Suburban
1919	$22,800,000	$6,050,000	$7,550,000
1920	2,250,000	2,340,000	4,200,000
1921	11,740,000	1,900,000	7,250,000
1922	865,000	750,000	27,138,000
1923	14,562,000		6,305,000
1924	50,797,000	21,731,600	11,414,000
1925	23,141,000	750,000	486,000

Comparison of Maturities in the Electric Railway Field

1926	$26,644,790	1922	$160,015,860
1925	28,224,000	1921	207,617,530
1924	73,051,600	1920	80,466,100
1923	94,851,800	1919	116,785,500

Principal Electric Railway Maturities in 1926 Based on Dow, Jones & Company's Compilation

	Rate	Amount
January		
Niagara Falls & Suspension Bridge Railway, 1st	6	$488,000
Interborough Rapid Transit Company, equipment trusts, B	6½	450,000
Eastern Massachusetts Street Railway serial	6	300,000
Lowell & Fitchburg Street Railway 1st	5	275,000
Oklahoma Railway junior mortgage	6	260,000
Brooklyn City Railroad equipment trusts A	5	375,000
		$2,148,000
February		
Peoria Railway refunding	5	$1,754,000
Detroit, Ypsilanti, Ann Arbor & Toledo Ry. consolidated	5	1,610,000
Detroit, Ypsilanti & Ann Arbor Railway, consolidated	6	330,000
Fitchburg & Leominster Street Railway consolidated	7	300,000
Philadelphia Rapid Transit Company, equipment trust G	5½	237,500
Pittsburgh Railways car trust	6	200,000
Western Massachusetts Street Railway 1st	5	200,000
		$4,631,000
March		
Interborough Rapid Transit Company equipment trust, A	6	$280,000
Clinton Street Railway 1st	5	400,000
		$680,000
April		
Kankakee Electric Railway 1st	6	$200,000
Rockville, Broad Brook & Eastern Windsor Railway	5	200,000
		$400,000
May		
Indiana, Columbus & Eastern Traction refunding	5	$6,400,000
North Hudson County Railway ext	6	1,291,000
West Philadelphia Passenger Railway 2nd	5	750,000
Wheeling & Western 1st	5	235,000
		$8,676,000
June		
Roxboro, Chestnut Hill & Norris Railway	5	$371,000
Detroit & Pontiac Railway consolidated	4½	362,000
Shawnee-Tecumseh Traction 1st	5	300,000
Goff Falls, Litchfield & Hudson Railway 1st	5	200,000
Frostburg, Eekenington & Cumberland 1st	5	230,000
Lonaconing, Midland & Frostburg Railway	5	200,000
		$1,663,000
July		
Grand Rapids, Grand Haven & Muskegon 1st	5	$1,500,000
Brunswick Traction gold	5	500,000
		$2,000,000
August		
Brownsville Avenue Street Railway, (Pittsburgh), 1st	5	$300,000
Philadelphia Rapid Transit equipment trust G	5½	237,500
Worcester & Blackstone Valley Railway	4½	200,000
		$737,500
September		
None		
October		
United Railways, St. Louis, receiver's certificates	6	$4,200,000
		$4,200,000
November		
Interborough Rapid Transit equipment trust C	6	$570,000
		$570,000
December		
Chicago, Aurora & Elgin Railroad two year	6½	$750,000
Philadelphia Rapid Transit equipment trust H	5½	759,290
		$1,509,290
Total of all public utilities:		
1926		$26,644,790
1925		$28,224,00

is now being attempted by the roads in the Central West, but some bankers do not hold to the same views about passenger equipment. The definite position is taken by one of the largest houses of original issue that the ability of the management, the record of earnings of the past, the political situation and the degree of co-ordination of bus and trolley service would be the sole basis upon which it would judge a proposal to sell equipment trust obligations to the public. Of course, it would not stand sponsor for an issue of bonds secured by a type of car that might be considered a freak, but the type of car would be incidental to the other factors. On the other hand, other houses of issue while weighing all the points previously mentioned would be guided to a very large extent by the suitability of the equipment for use in an emergency in a city other than the one for which it was originally intended. There is no need here to stress the favor with which steam railroad equipment trust obligations are regarded. The fields differ greatly in extent, but it is generally felt that the electric railways have much to learn from the steam railroads in this respect.

Lastly it is of interest to note the extent of the recognition received by the report of the advisory committee on electric railway finance. Not in just the words of the committee, but over and over again representatives of banking houses gave expression in their own words to the opinion so ably expressed by the committee in its report to the effect that there are too many examples of electric railway properties which have been revitalized by new managements and new technical equipment, by recasting financial structures, and by modernized methods of salesmanship, for anyone to conclude in any way other than that the electric railway industry is fundamental and that its troubles have been the result of a combination of unprecedented and uncontrollable economic factors. Bankers expect that the financial problem, in those cases where it is a problem, will be attacked with the courage with which the other railway problems are now being attacked.

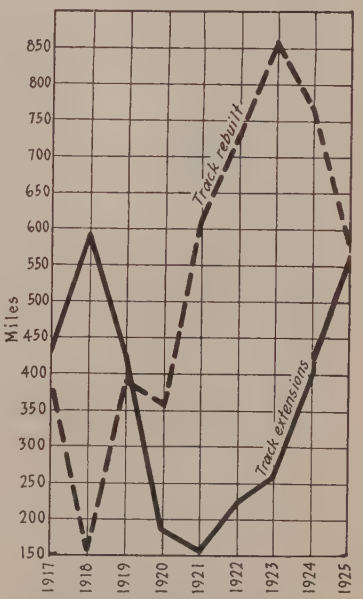
Track Extensions Show Substantial Gain Over Previous Years

Electric Railway Mileage Added During Past Twelve Months Is Larger than in Any Other Year Since 1918—Extensions to City and Interurban Trackage Show Increases Over 1924 — More than Twice as Much Steam Railroad Mileage Was Electrified

FOR the fourth successive time, the mileage of new electric railway track added during the year exceeded that of the preceding twelve-month period. New track added during 1925 was approximately 340 miles. Extensions to city trackage amounted to a little more than 225 miles, a gain over 1924 and the largest figure since 1917. Interurban extensions totaled about 112 miles, a substantial increase over the preceding year and also the largest figure since 1917. Electrification of steam railroad lines, amounting to somewhat over 230 miles, was more than double that of the year before. Thus the total of all extensions was approximately 580 miles, or more than for any other year since 1918.

Most notable were the extensions to city track mileage in the Central, Southern, and Western states, each of which group added more urban trackage in 1925 than in the previous year. The Central and Southern groups also added more interurban mileage during the past twelve months than they did the year before. In the Western group, however, the new interurban mileage was less than in 1924. Extensions in the New England and Eastern states and in Canada totaled somewhat less for 1925 than for the preceding year.

The largest single extension made during the year was an addition of 56 miles to the interurban trackage of the Chicago, North Shore & Milwaukee Railroad, involving the construction of the Waukegan cut-off. Plans for this undertaking were described in considerable detail in the issue of ELECTRIC RAILWAY JOURNAL for July 26, 1924.



Mileage of Track Extensions and Reconstruction Since 1917

Electrification of steam railroad lines was carried out by five companies. In point of mileage the largest enterprise of this kind was that of the Staten Island Rapid Transit Company, a subsidiary of the Baltimore & Ohio Railroad, approximately 56 single-track miles being changed over to electric operation. The Babylon

Summary of Track Construction for 1925

	New England States	Eastern States	Central States	Southern States	Western States	Canada	Grand Total
Track Extensions							
No. of companies....	6	17	30	11	26	10	100
Miles of urban track	4.554	27.265	72.705	24.006	52.111	46.671	227.312
Miles of interurban track.....	0.559	8.906	64.449	12.527	22.862	3.180	112.483
Total miles built.	5.113	36.171	137.154	36.533	74.973	49.851	339.795
Track Reconstruction							
No. of companies...	15	44	61	17	27	15	179
Miles of urban track	54.861	149.925	155.646	34.504	65.210	25.600	485.746
Miles of interurban track.....	23.165	27.978	26.916	1.000	11.126	2.970	93.155
Total miles rebuilt	78.026	177.903	182.562	35.504	76.336	27.480	578.901

Track Built and Rebuilt During 1925

Name of Company	Extension Miles City	Extension Miles Interurban	Rebuilt Miles City	Rebuilt Miles Interurban
Connecticut				
Connecticut Co.	1.694	0.126	11.167	2.831
Maine				
Bangor Railway & Electric Co.	.....	.....	0.920	.....
Biddeford & Saco Railroad	.....	.....	.....	0.500
Cumberland County Pr. & Lt. Co.	.....	.....	1.858	.....
York Utilities Co.	.....	.....	0.663	0.757
Massachusetts				
Berkshire St. Ry.	.....	.....	0.725	1.604
Boston Elevated Railway	0.700	.....	11.500	.....
Eastern Massachusetts St. Ry.	0.330	.....	8.000	3.264
Middlesex & Boston St. Ry.	.....	.....	5.000	.....
New Bedford & Onset St. Ry.	.....	.....	.....	1.150
Springfield St. Ry.	0.195	0.263	3.428	2.899
Union St. Ry., New Bedford	.....	.....	1.000	6.000
Worcester Consolidated St. Ry.	.....	.....	0.500	1.600
Rhode Island				
Newport Elec. Corp.	0.095	.....	.....	.....
United Electric Rys., Providence	1.540	0.170	8.100	2.560
Vermont				
Springfield Terminal Ry.	.....	.....	2.000	.....
Total	4.554	0.559	54.861	23.165
District of Columbia				
Capital Traction Co.	.....	.....	1.205	.....
Washington Ry. & Elec. Co.	.....	.....	7.580	.....
Washington-Virginia Ry.	.....	.....	0.340	.....
Maryland				
Potomac Edison Co.	0.550	.....	0.417	.....
United Rys. & El Co.	.....	.....	17.000	.....
New Jersey				
Central Passenger Ry.	.....	.....	1.000	.....
Morris County Trac. Co.	.....	.....	2.272	.....
Ocean City Elec. R.R.	.....	.....	1.117	.....
Trenton & Mercer Cty Trac. Corp.	0.390	.....	0.570	0.960
Trenton-Princeton Traction Co.	.....	.....	0.500	.....
New York				
Binghamton Ry.	.....	.....	.....	1.430
Brooklyn City R.R.	.....	.....	9.685	.....
Brooklyn-Manhattan Trans. Corp.	1.153	.....	13.115	.....
Elmira Water, Lt. & R.R.	.....	.....	0.333	.....
Empire State R.R.	.....	.....	0.680	.....
Fonda, Johnstown & Gloversville R.R.	.....	.....	0.300	.....
Hamburg Ry.	.....	.....	1.500	0.600
Interborough Rapid Transit Co.	4.210	.....	.....	.....
International Ry.	0.250	0.440	0.230	.....
Jamestown St. Ry.	.....	.....	1.500	.....
New York & Queens County Ry.	9.000	.....	.....	.....
New York State Rys.	0.190	.....	9.020	.....
Rochester & Syracuse R.R.	.....	.....	0.370	.....
Schenectady Ry.	0.350	.....	2.250	.....
Southern New York Ry.	.....	.....	.....	1.000
United Traction Co., Albany	.....	.....	1.795	.....
Pennsylvania				
Allegheny Valley St. Ry.	.....	.....	.....	0.178
Altoona & Logan Val. Elec. Ry.	.....	.....	2.610	.....
Beaver Valley Traction	.....	.....	1.326	.....
Buffalo & Erie Ry.	.....	.....	0.060	.....
Erie Rys.	.....	.....	0.511	.....
Harrisburg Rys.	.....	.....	1.170	.....
Hershey Transit Co.	1.400	.....	.....	.....
Lehigh Traction Co.	.....	.....	0.795	.....
Lehigh Valley Transit Co.	.....	5.880	4.700	0.590
Meyersdale El. Lt., Ht. & Pr. Co.	.....	0.500	1.000	6.500
Oley Valley Ry.	.....	.....	.....	1.500
Philadelphia Rapid Transit Co.	2.297	0.212	26.085	.....
Pittsburgh Rys.	5.225	0.317	20.527	3.290
Reading Transit Co.	2.200	0.600	5.900	2.000
Schuylkill Ry.	.....	.....	4.000	2.000
Scranton Ry.	.....	.....	3.610	3.020
Webster, M., B. V. & F. C. St. Ry.	.....	.....	2.000	.....
West Penn Rys.	.....	0.407	.....	4.910
York Rys.	0.050	.....	0.352	.....
Virginia				
Roanoke Ry. & Elec Co.	.....	0.550	.....	.....
West Virginia				
Princeton Power Co.	.....	.....	1.00	.....
Wheeling Public Service Co.	.....	.....	1.500	.....
Total	27.265	8.906	149.925	27.978
Illinois				
Alton Granite & St. Louis Trac. Co.	.....	.....	0.256	.....
Chicago North Shore & Milwaukee R.R.	0.208	56.683	.....	3.258
Chicago Rapid Transit Co.	10.130	.....	7.800	.....
Chicago Surface Lines	3.670	.....	10.100	.....
Chicago & Joliet Elec. Ry.	.....	.....	0.750	0.300
Chicago & West Towns Ry.	.....	.....	2.092	.....
East St. Louis Ry.	0.284	.....	0.640	.....
East St. Louis & Suburban Ry.	.....	.....	.....	1.000
Illinois Power Co.	.....	.....	1.750	.....
Illinois Traction, Inc.	.....	2.000	.....	1.200
Rockford City Traction Co.	.....	.....	0.700	.....
St. Louis & Belleville Elec. Ry.	.....	.....	.....	0.663
Tri-City Ry. of Illinois	.....	.....	0.170	.....
Indiana				
Beech Grove Traction Corp.	.....	0.100	.....	.....
Chicago, So. Bend & No. Ind. Ry.	.....	.....	2.750	.....
Gary St. Ry.	0.834	.....	0.600	.....
Indianapolis St. Ry.	1.637	.....	28.330	.....
Indianapolis & Cincinnati Trac. Co.	.....	.....	.....	0.500
Interstate Public Service Co.	0.300	0.580	1.750	0.500
Northern Indiana Power Co.	.....	.....	0.142	.....
Southern Indiana Gas & Elec. Co.	1.300	.....	1.700	.....
Terre Haute, Indianapolis & Eastern Trac. Co.	0.200	.....	.....	.....
Union Traction Co. of Indiana	.....	0.126	.....	1.100
Iowa				
Clinton, Davenport & Muscatine Ry.	.....	0.800	.....	.....
Des Moines City Ry.	0.270	.....	0.110	.....
Dubuque Electric Co.	.....	.....	0.132	.....
Iowa So. Utilities Co., Burlington	21.00	.....	0.500	.....
Sioux City Service Co.	.....	.....	5.000	.....
Tri-City Ry. of Iowa	0.190	.....	0.100	.....
Kentucky				
Cincinnati, Newport & Covington Ry.	.....	.....	0.580	.....
Kentucky Trac. & Terminal Co.	.....	.....	1.180	.....
Louisville Ry.	.....	.....	1.830	.....
Michigan				
City of Detroit Dept. of St. Rys.	17.095	.....	2.489	.....
Grand Rapids Ry.	0.164	.....	3.192	.....
Lake Superior Dist. Power Co.	.....	.....	2.000	.....
Menominee & Marinette Lt. & Traction Co.	.....	.....	0.905	.....
Michigan Elec. Ry.	.....	.....	0.595	.....
Saginaw Transit Co.	.....	0.500	.....	.....
Detroit United Ry.	.....	1.4	.....	5.3
Minnesota				
Duluth St. Ry.	.....	.....	3.490	.....
Mankato Elec. Traction Co.	.....	.....	0.227	.....
Minneapolis St. Ry.	1.808	.....	6.020	.....
St. Paul City Ry.	1.619	.....	4.230	.....
Missouri				
Kansas City Rys.	0.462	.....	4.230	.....
St. Joseph Ry., Lt., Ht. & Pwr. Co.	.....	.....	2.900	.....
St. Louis Elec. Terminal Ry.	4.750	.....	.....	.....
United Railways of St. Louis	0.770	.....	13.510	0.890
Ohio				
Cincinnati, Georgetown & Portsmouth R.R.	.....	1.700	.....	.....
City of Ashtabula, Dept. of St. Rys.	.....	.....	0.284	.....
Cleveland Ry.	1.484	.....	10.381	.....
Cleveland, Southwestern Ry. & Lt. Co.	.....	.....	.....	9.500
Columbus, Delaware & Marion El. Co.	.....	.....	0.250	.....
Community Traction Co.,	2.760	.....	1.180	.....
Dayton & Troy Elec. Ry.	.....	.....	2.000	.....
Indiana, Columbus & Eastern Tr. Co.	.....	.....	.....	0.090
Lima-Toledo R.R.	.....	0.560	.....	.....
Pennsylvania-Ohio Elec. Co.	.....	.....	0.642	.....
Pennsylvania-Ohio Pwr. & Lt. Co.	.....	.....	0.340	.....
Peoples Ry.	.....	.....	1.149	.....
Southern Ohio Public Service Co.	.....	.....	3.000	.....
Springfield Ry.	.....	.....	4.000	.....
Wisconsin				
Lake Superior District Ry.	.....	.....	1.990	.....
Madison Railways	.....	.....	0.303	.....
Milwaukee Elec. Ry. & Lt. Co.	1.770	.....	12.683	1.105
Milwaukee Northern Ry.	.....	.....	0.500	.....
Northern States Power Co.	.....	.....	1.000	.....
Wisconsin Pwr. & Lt. Co.	.....	.....	2.550	1.510
Wisconsin Valley Elec. Co.	.....	.....	0.644	.....
Total	72.705	64.449	155.646	26.916
Alabama				
Alabama Power Co.	1.165	.....	1.514	.....
Birmingham Elec. Co.	0.120	12.500	.....	.....
Mobile Light & R.R. Co.	.....	.....	1.360	.....
Arkansas				
Arkansas Central Pwr. Co.	.....	.....	4.77	.....
Intercity Terminal Ry.	1.24	.....	.....	.....
Florida				
Pensacola Electric Co.	.....	0.027	.....	.....
St. Johns Electric Co.	3.180	.....	1.560	.....
Tampa Electric Co.	.....	.....	3.000	.....
Georgia				
Columbus Elec. & Pwr. Co.	.....	.....	0.190	.....
Georgia Ry. & Pwr. Co.	2.845	.....	6.50	.....
Macon Ry. & Lt. Co.	.....	.....	1.100	.....
Savannah Elec. & Pwr. Co.	0.630	.....	0.230	.....
Louisiana				
Municipal St. Ry. Monroe	8.000	.....	0.340	.....
New Orleans Public Service, Inc.	3.466	.....	4.500	.....
Shreveport Rys.	1.530	.....	.....	.....
North Carolina				
Carolina Pwr. & Lt. Co.	.....	.....	0.400	.....
Durham Public Service Co.	.....	.....	0.310	.....
South Carolina				
Charleston Consolidated Ry. & Ltg. Co.	.....	.....	1.310	.....
Tennessee				
Memphis St. Ry.	1.830	.....	5.420	.....
Tennessee Electric Power Co.	.....	.....	2.000	.....
Union Traction Co., Nashville	.....	.....	.....	1.000
Total	24.006	12.527	34.504	1.000

Track Built and Rebuilt During 1925—(Concluded)

Name of Company	Extension Miles City	Extension Miles Interurban	Rebuilt Miles City	Rebuilt Miles Interurban
California				
Key System Transit Co.	.....	.....	13.840	0.170
Los Angeles Ry.	3.900	.....	1.000	.....
Market St. Ry.	0.546	.....	4.274	0.076
Municipal Ry. of San Francisco	5.260	.....	0.500	.....
Pacific Elec. Ry.	0.920	11.390	5.870	8.910
Peninsular Ry.	0.025	.....	0.410	.....
Petaluma & Santa Rosa R.R.	.....	0.52	.....	.....
Sacramento Northern R.R.	.....	1.73	.....	.....
San Diego Elec. Ry.	3.240	.....	.....	.....
San Francisco, Napa & Calestoga Ry.	.....	1.400	.....	.....
Santa Barbara & Suburban Ry.	.....	.....	0.205	.....
Colorado				
Denver & Intermountain R.R.	.....	0.017	.....	.....
Denver Tramway	1.033	0.293	6.488	0.016
Fort Collins Municipal Ry.	0.500	.....	.....	.....
Kansas				
Topeka Ry.	.....	.....	0.759	.....
Nebraska				
Lincoln Traction Co.	.....	.....	0.265	.....
Omaha & Council Bluffs St. Ry.	.....	.....	6.000	.....
Omaha, Lincoln & Beatrice Ry.	0.150	.....	.....	0.380
New Mexico				
Las Vegas Transit Co.	.....	.....	0.500	.....
Oklahoma				
Northest Oklahoma R.R.	.....	2.452	.....	.....
Oklahoma Ry.	.....	1.500	0.8	.....
Oklahoma Union Ry.	1.500	.....	0.500	.....
Pittsburg County Ry.	0.682	0.133	.....	0.284
Oregon				
Portland Elec. Pwr. Co.	4.180	.....	2.110	.....
Texas				
Dallas Ry.	8.959	.....	.....	.....
Eastern Texas Electric Co.	0.210	.....	0.137	.....
El Paso Electric Ry.	0.057	.....	0.660	.....
Galveston Electric Co.	.....	.....	4.000	.....
Houston Electric Co.	1.315	.....	2.660	.....
Laredo Electric Ry.	1.000	.....	.....	.....
Northern Texas Traction Co.	.....	.....	6.300	1.290
Wichita Falls Traction Co.	12.500	3.200	1.000	.....
Washington				
Grays Harbor Ry. & Lt. Co.	.....	.....	0.142	.....
Puget Sound Int'l Ry. & Pwr. Co.	.....	0.227	.....	.....
Seattle Munic St. Ry.	6.134	.....	3.040	.....
Spokane United Rys.	.....	.....	1.750	.....
Tacoma Ry. & Pwr. Co.	.....	.....	2.000	.....
Total	52.111	22.862	65.210	11.126
CANADA				
Alberta				
Lethbridge Municipal Ry.	.....	.....	0.947	.....
British Columbia				
British Columbia Elec. Ry.	1.780	.....	0.700	.....
Manitoba				
Brandon Municipal St. Ry.	.....	.....	1.000	.....
Winnipeg Elec. Co.	2.370	.....	0.380	.....
New Brunswick				
New Brunswick Pwr. Co.	.....	.....	2.250	.....
Ontario				
Cornwall St. Ry.	.....	.....	0.500	.....
Hydro-Electric Rys.	5.600	.....	1.110	.....
London St. Ry.	.....	.....	0.519	.....
Niagara, St. Catherines & Toronto Ry.	0.587	.....	0.617	.....
Ottawa Electric Ry.	4.820	.....	1.510	.....
Toronto Transportation Com.	16.465	.....	1.541	.....
Quebec				
Hull Electric Co.	0.100	.....	.....	.....
Montreal Tramways	14.350	3.180	12.180	2.970
Quebec Ry., Lt. & Pwr. Co.	0.580	.....	0.786	.....
Sherbrooke Ry. & Pwr. Co.	.....	.....	0.470	.....
Saskatchewan				
Moose Jaw Elec. Ry.	.....	.....	1.090	.....
Regina Municipal Ry.	0.019	.....	.....	.....
	0.019	.....	1.090	.....
Total	46.671	3.180	25.600	2.970
Grand Total	227.312	112.483	485.746	93.155

electrification of the Long Island Railroad involved about 54 track-miles. Other important undertakings were carried out by the Norfolk & Western Railroad, the Virginian Railway, and the New York, New Haven & Hartford Railroad. Mileages of these electrifications are given in an accompanying table.

Electrified Steam Line Extensions

	Single Track, Miles
Staten Island Rapid Transit Co. (Baltimore & Ohio System)	56.00
Long Island Railroad	54.00
Norfolk & Western Railroad	52.75
Virginian Railway	38.40
New York, New Haven & Hartford Railroad	35.21
Total	236.36

Track abandoned during 1925 by electric railways which continued to operate elsewhere totaled about 240 miles, or somewhat less than for the preceding year. The abandonments were about equally divided between urban and interurban. Nearly all of the interurban track abandoned was dismantled and removed, but a considerable part of the abandoned city trackage was allowed to remain in place.

Some seventeen electric railways abandoned all their trackage and ceased rail operation entirely. These, however, were all comparatively small companies. So far as is known, no regular transportation service is now provided in these localities. The mileage of track totally abandoned in 1925 was about 50 miles less than the 1924 figure. Track rebuilt during the year was somewhat less than in 1924, totaling a little under 600 miles. In this figure, however, is not included a large amount of track on which considerable maintenance was done, but which was not entirely rebuilt.

Comparison of Track Construction by Years

Year	No. of Companies	Extensions: Urban Track	Extensions: Interurban Track	Electrified Steam Lines	Total	Track Rebuilt
1907	(a)	(a)	(a)	.....	1,880.00	(a)
1908	157	1,174.5		84.00	1,258.50	(a)
1909	160	774.7		112.40	887.16	(a)
1910	217	1,204.8		192.40	1,397.20	(a)
1911	223	1,105.0		86.50	1,191.50	(a)
1912	171	869.4		80.80	950.20	(a)
1913	181	974.9		119.00	1,093.90	(a)
1914	163	716.5		229.00	946.40	(a)
1915	136	596.0		448.20	1,044.20	(a)
1916	104	115.40	240.90	388.00	744.30	(a)
1917	121	251.10	125.60	66.00	442.70	375.40
1918	80	216.41	97.41	275.70	589.53	155.43
1919	73	110.90	29.67	287.60	428.17	390.64
1920	87	145.69	30.87	8.92	185.48	361.77
1921	78	108.15	38.95	8.08	155.18	615.21
1922	104	126.27	85.11	12.35	223.73	739.70
1923	272	169.61	63.54	26.16	259.31	854.63
1924	243	218.085	93.988	83.39	395.463	764.323
1925	207	227.312	112.483	236.36	576.155	578.901

(a) Information not available.

Entire Properties Abandoned in 1925

Albia Light & Railway	7.00
Arkansas City-Winfield Northern Interurban Railway	20.50
Cleveland & Chagrin Falls Railway	12.00
Cleveland & Eastern Traction Company	40.00
Danville & Sunbury Transit Company	2.80
Gainesville Railway	10.00
Illinois Light & Traction Company	6.00
Jersey Shore & Antes Fort Railroad	2.75
Kentucky Utilities Company	3.30
Nassau County Railway	10.00
New Paltz, Highland & Poughkeepsie Traction Company	9.27
Skippack & Perkiomen Transit Company	13.00
Southeastern Ohio Railway	16.00
Troy & New England Railway	10.11
Valdosta Street Railway	5.25
Wahpeton Breckenridge Street Railway	1.00
Waupaca Electric Service & Railway	6.21
Total	174.19

Suspensions and Partial Track Abandonments During 1925

Includes All Pieces of Track Sidings, Yards, Etc., Permanently Abandoned—Companies Arranged Alphabetically by States

	Miles of City Track			Miles of Interurban Track		
	Service Suspended	Abandoned	Removed	Service Suspended	Abandoned	Removed
Connecticut						
Connecticut Co.	.....	8.706	2.276	.....	69.801	0.430
Hartford & Springfield St. Ry.	.....	.....	.....	9.700	.....	.....
New York, New Haven & Hartford R.R.	.....	.....	.....	.....	.....	1.920
Maine						
Central Maine Power Co.	.....	.....	.....	9.000	.....	.....
Cumberland County Pwr. & Light Co.	.....	.280	.....	.....	.....	.....
Massachusetts						
Boston Elevated Ry.	17.203	6.630	1.400	.....	.....	.....
Boston & Worcester St. Ry.	6.000	.....	.....	.....	.....	.....
Eastern Massachusetts St. Ry.	.....	.....	.800	.....	.....	12.260
Interstate St. Ry.	.....	.....	.....	4.230	4.230	.....
New Bedford & Onset St. Ry.	.....	.....	.....	.....	.....	16.000
Plymouth & Brockton St. Ry.	7.000	.....	.....	.....	.....	.....
Springfield St. Ry.	1.320	.....	.....	.....	.....	.....
Worcester Consolidated St. Ry.	.....	.....	.....	64.250	.....	.....
New Hampshire						
Portsmouth Electric Ry.	7.650	.....	.....	10.330	.....	.....
Rhode Island						
Newport Electric Corp.	4.700	.....	.....	20.000	.....	.....
United Electric Rys.	1.580	1.580	.....	7.100	7.100	20.660
Vermont						
Bellows Falls & Saxtons River St. Ry.	2.000	.....	.....	4.000	.....	.....
District of Columbia						
Washington Ry. & El. Co.	2.627	.....	.260	5.619	1.600	3.250
Maryland						
Cumberland & Western-port Elec. Ry.	.....	.....	.....	16.600	.....	.....
United Rys. & Elec. Co.	.....	.....	.500	.....	.....	.....
New Jersey						
Ocean City Electric R.R.	.....	.500	.....	.....	.....	.....
Trenton & Mercer County Traction Co.	.....	.....	.....	.....	.....	5.670
New York						
Auburn & Syracuse Elec. R.R.	1.900	1.900	1.900	.....	.....	.....
Black River Traction Co.	.....	1.260	.....	.....	.....	.....
Hornell Traction Co.	.....	.....	.....	1.120	1.120	1.120
International Ry.	8.820	5.110	.790	.....	.....	.....
Jamestown Westfield & Northwestern R.R.	.....	.....	.....	8.000	.....	.....
Kingston Consol. R.R.	3.500	3.500	.....	.....	.....	.....
New York State Rys.	.....	.....	13.000	.....	.....	.....
New York & Queens County R.R.	.....	9.510	3.150	.....	.....	.....
Olean, Bradford & Salamanca Ry.	.750	.750	.330	9.000	9.000	.....
United Traction Co.	6.159	6.159	4.373	.....	.....	.....
Pennsylvania						
Beaver Valley Trac. Co.	8.000	.....	.....	.....	.....	.....
Chambersburg & Gettys-burg Elec. Ry.	.....	2.000	.....	.....	.....	.....
Chambersburg & Ship-pensburg Ry.	.....	.....	.....	9.000	.....	.....
Citizens Traction Co.	.....	.....	.....	.500	.....	.....
Harrisburg Rys.	.320	.....	.....	.....	.....	.....
Lehigh Valley Transit Co.	.....	.....	.....	.....	6.350	.930
Mauch Chunk & Lehighton Transit Co.	.....	.....	.....	.....	4.000	.....
Pennsylvania & Maryland St. Ry.	.170	.....	.....	.....	.....	.....
Philadelphia Rapid Transit Co.	2.913	.....	12.340	3.879	.....	.....
Pittsburgh Rys.	1.560	.033	2.426	.....	.....	.082
Reading Transit Co.	.....	1.100	.....	.....	.....	.600
Stroudsburg Traction Co.	.500	.500	.500	.....	.....	.....
West Penn. Rys.	.....	.....	.637	.....	.....	.....
York Rys.	.....	.....	.....	.....	.....	.....
West Virginia						
Wheeling Pub. Serv. Co.	.....	4.000	.....	.....	.....	.....
Illinois						
Alton Granite & St. Louis Traction Co.	.....	.....	.....	.....	.019	.....
Aurora, Elgin & Fox River Electric Co.	.....	.....	.....	8.910	.....	.....
Bloomington, Pontiac & Joliet Elec. Ry.	.....	.....	.....	2.000	.....	.....
Central Illinois Public Service Co.	.....	.....	.....	7.410	.....	.....
Chicago North Shore & Milwaukee R.R.	.227	.....	.....	.....	.....	.....
Illinois Central Elec. Ry.	.....	.....	.....	6.350	.....	.....
Illinois Power & Light Corp., Galesburg	.....	2.600	.....	.....	.120	.....
Illinois Traction, Inc., Ill. Valley Div.	.330	.....	.....	.....	.....	.....
Tri-City Ry. of Illinois	.....	.....	.110	.....	.....	.....
Indiana						
Terre Haute, Indianapolis & Eastern Trac. Co.	.....	.....	.....	2.070	.....	.....
Iowa						
Clinton, Davenport & Muscatine Ry.	.....	.....	.....	.....	.....	.050
Des Moines & Central Iowa R.R.	.....	.....	.....	.....	.....	1.200
Iowa—Continued						
Iowa Southern Utilities Co., Burlington	2.500	.....	.....	.....	.....	.....
Iowa Southern Utilities Co., Centerville	1.250	.....	.....	.....	.....	.....
Omaha & Council Bluffs Ry. & Bridge Co.	.....	.....	1.000	.....	.....	.....
Tri-City Ry. of Iowa	.....	.....	.860	.....	.....	.....
Kentucky						
Paducah Ry.	.....	.....	.....	.....	.....	.473
Michigan						
Dept. of St. Rys., Detroit	.....	.....	.404	.....	.....	.....
Detroit United Ry.	4.700	4.700	.600	10.300	10.300	9.500
Grand Rapids Ry.	.....	.648	.....	.....	.....	.....
Menominee & Marinette Lt. & Trac. Co.	.....	.....	.735	.....	.....	.....
Missouri						
St. Louis Elec. Terminal Ry.	2.000	.....	1.300	.....	.....	.....
United Rys. Co. of St. Louis	.....	.....	1.000	.....	.....	.....
Ohio						
Cleveland Ry.	.668	1.859	.190	.....	.....	.....
Cleveland Southwestern Ry. & Lt. Co.	.....	.....	.....	.....	.....	22.500
Columbus, Urbana & Western Elec. Ry.	.....	.....	.....	7.500	.....	.....
Community Traction Co.	.510	.....	.210	.....	.....	.....
Southern Ohio Public Service Co.	2.000	.....	.....	.....	.....	.....
Toledo, Fostoria & Findlay Ry.	.....	.....	.....	.....	12.000	.....
Wisconsin						
Milwaukee Elec. Ry. & Lt. Co.	.....	1.317	.....	.....	.....	.....
Wisconsin Pwr. & Lt. Co.	2.000	.....	.....	.....	.....	.....
Alabama						
Alabama Power Co.	.....	.550	.....	.....	.....	.....
Florida						
Jacksonville Traction Co.	4.550	4.550	4.550	.....	.....	.....
Key West Electric Co.	1.900	.....	.....	.....	.....	.....
St. Johns Electric Co.	4.110	.....	.....	.....	.....	.....
Georgia						
Columbus Electric & Pwr. Co.	5.920	5.920	5.920	.....	.....	.....
Georgia Ry. & Pwr. Co.	9.050	9.050	.....	.....	.....	.....
Savannah Electric & Power Co.	.....	.....	.410	.....	.....	.....
Louisiana						
Louisiana Elec. Co., Inc.	2.650	.....	2.650	.....	.....	.....
New Orleans Public Service, Inc.	1.621	.....	3.696	.....	.....	.....
Mississippi						
Mississippi Power Co.	13.000	.....	.....	.....	.....	.....
North Carolina						
Durham Public Serv. Co.	4.100	4.100	.....	.....	.....	.....
South Carolina						
Charleston Consolidated Ry. & Ltg. Co.	.....	.330	.....	.....	.011	.....
Tennessee						
Memphis St. Ry.	.....	.....	.110	.....	.....	.....
California						
Pacific Electric Ry.	.....	12.180	.....	.....	2.020	.....
Petaluma & Santa Rosa R.R.	.....	.....	.....	5.430	.....	.....
San Diego Electric Ry.	1.510	.....	.....	.....	.....	.....
San Diego & Arizona Ry.	.....	.....	.....	4.412	.....	.761
San Francisco Napa & Calistoga Ry.	.....	.....	.....	1.400	.....	.....
Colorado						
Denver Tramways	.....	.....	2.590	.....	.....	.....
Kansas						
Arkansas Valley Inter-urban Ry.	.....	2.000	.....	.....	.....	.630
Kansas City, Leaven-worth & Western Ry.	5.360	.....	5.360	.....	.....	.....
Topeka Ry.	2.770	1.700	.345	.....	.....	.....
Oklahoma						
Northeast Oklahoma R.R.	.....	.....	.....	.394	.....	.394
Texas						
Dallas Ry.	.....	.....	.422	.....	.....	.....
Eastern Texas Elec. Co.	.....	.....	.....	.....	.....	.....
El Paso Electric Co.	.570	.....	.....	.....	.....	.....
Galveston Electric Co.	.....	1.000	1.000	.....	.....	.....
Houston Electric Co.	1.090	.....	1.274	.....	.....	.....
Rio Grande Valley Traction Co.	.....	.....	.....	6.940	.....	.....
Southwestern Traction Co.	.800	.800	.800	.....	.....	.....
Washington						
Grays Harbor Ry. & Lt. Co.	1.350	.....	.....	.....	.....	.....
Seattle Municipal St. Ry.	2.965	.....	.....	.....	.....	.....
Spokane United Rys.	.....	2.361	2.361	.....	.....	.....
Canada						
British Columbia Electric Ry.	.....	.....	.....	.....	.....	24.440
Hydro-Electric Rys.	.....	.720	.....	.....	.....	.....
Toronto Transportation Commission	.....	2.901	.....	.....	.....	.....
Montreal Tramways	.....	.....	2.030	.....	.....	.....
Quebec Ry. Lt. & Pwr. Co.	1.420	1.420	.710	.....	.....	.....
Totals	165.593	114.224	85.319	245.444	127.671	122.870

Car Purchases During 1925 Were Below Requirements

Reduction in the Number of New Cars Ordered This Year Emphasizes the Importance of Directing Increased Attention to Replacement of Obsolete Equipment—New England Was the Only Section Reporting Increased Purchases Over Last Year

NEW car purchases during 1925 show a material reduction below previous years. The statistics of new rolling stock given in the tables and charts herewith indicate that electric railways have not only failed to buy equipment over a period of years at a rate sufficient to provide adequate replacements, but have seriously fallen behind their average during the past year. The need for directing increased attention to the subject of replacing obsolete equipment at a rate sufficient to keep pace with modern transportation standards thus becomes obvious. The total of 1,659 cars and electric locomotives ordered during 1925 is the second lowest recorded for any year since 1907. The lowest was in 1921 with a total of 1,276 cars and electric locomotives. Purchases of buses by electric railways, on the other hand, show a large increase over previous years. Detailed statistics on this subject are given in another article in this issue.

NEW ROLLING STOCK ORDERED DURING LAST FIVE YEARS

Year	Passenger Cars: City	Passenger Cars: Interurban	Passenger Cars: Total	Express, Freight, Service, Locomotives and Miscellaneous	Grand Total
1921	1,059	129	1,188	88	1,276
1922	2,912	187	3,099	439	3,538
1923	2,915	427	3,342	687	4,029
1924	1,985	538	2,523	1.569	4,092
1925	1,054	320	1,374	285	1,659

Information received from practically every electric railway in the United States and Canada shows that there were 94 companies that bought new cars during 1925, but that the majority of purchases were confined to fifteen companies, which accounts for a total of 965 of the new passenger cars. The railways that purchased twenty or more cars are shown in Table III.

The special comparisons of types of cars which were purchased during 1925 as given in Table VI and in several of the diagrams show that for city service the one-man two-man type of car is being bought in greatest quantities. Cars for rapid transit service form 14.4 per cent of the orders, two-man cars 22 per cent, and the one-man car but 11.6 per cent. One of the charts illustrates in a very striking manner the rise and fall in popularity of the one-man car of approximately 28-ft. length which is commonly known as the safety car, and the rapid increase in popularity of the one-man two-man car which first made its appearance in 1922. For city service there were 512 one-man two-man cars purchased last year and 245 two-man cars. Motor cars for rapid transit service constitute the next greatest number, there being 160 of these. There were 129 one-man cars. Of this latter class, 55 were with bodies approximately 28 ft. long, 56 were single-truck cars with bodies longer

Table I—New Rolling Stock Ordered Since 1907

Year	Passenger Cars: City	Passenger Cars: Interurban	Freight and Miscellaneous Cars	Electric Locomotives	Total
1907	3,483	1,327	1,406	(a)	6,216
1908	2,208	727	176	(a)	3,111
1909	2,537	1,245	1,175	(a)	4,957
1910	3,571	990	820	(a)	5,381
1911	2,884	626	505	(a)	4,015
1912	4,531	783	687	(a)	6,001
1913	3,820	547	1,147	(a)	5,514
1914	2,147	384	479	(a)	3,010
1915	2,072	336	374	(a)	2,782
1916	3,046	374	491	31	3,942
1917	1,998	185	223	49	2,455
1918	1,842	255	278	44	2,419
1919	2,129	128	172	18	2,447
1920	2,889	227	465	17	3,598
1921	1,059	129	81	7	1,276
1922	2,912	187	405	34	3,538
1923	2,915	427	595	92	4,029
1924	1,985	538	1,538	31	4,092
1925	1,054	320	238	47	1,659

(a) Included in "Freight and Miscellaneous Cars."

Table II—Special Comparison of New Rolling Stock Orders by Years

	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916
Number of railways reporting new cars	94	119	167	145	94	172	160	140	182	250
City Service										
Number of one-man cars (28-ft. body S. T.)	55	103	312	772	565	1,699	1,383	644	280	187
Number of one-man cars other than 28-ft. body	74	96	183	227	.....	.....	.....	.....	.....	.....
Number of one-man, two-man cars	512	1,224	1,076	471	.....	.....	.....	.....	.....	.....
Number of two-man passenger motor cars*	405	537	1,097	1,290	383	847	635	1,068	1,316	2,731
Number of passenger trailers	8	25	247	150	111	343	111	130	402	128
Service cars	70	44	121	103	47	104	31	(a)	(a)	(a)
Total cars city service	1,124	2,029	3,036	3,015	1,106	2,993	2,160	1,842	1,998	3,046
Interurban Service										
Number of one-man cars	3	61	56	40	.....	.....	.....	.....	.....	.....
Number of one-man, two-man cars	70	38	38	9	.....	.....	.....	.....	.....	.....
Number of two-man motor cars*	207	435	330	122	103	195	96	200	158	303
Number of passenger trailers	40	4	3	16	26	32	32	55	27	71
Number of freight, express and miscellaneous cars	168	1,494	474	302	34	361	141	(a)	(a)	(a)
Total cars interurban service	488	2,032	901	489	163	588	269	255	185	374
Total number of cars	1,612	4,061	3,937	3,538	1,269	3,581	2,429	2,375	2,406	3,911
Number of electric locomotives	47	31	92	34	7	17	18	44	49	31

*Includes motor and trail cars for subway, elevated and train service. (a) Not available.

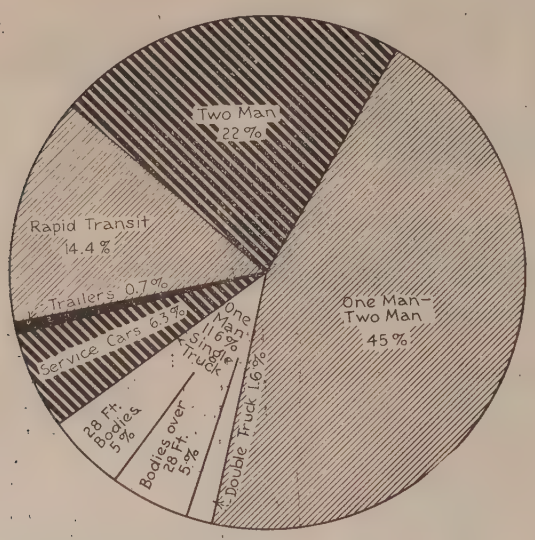
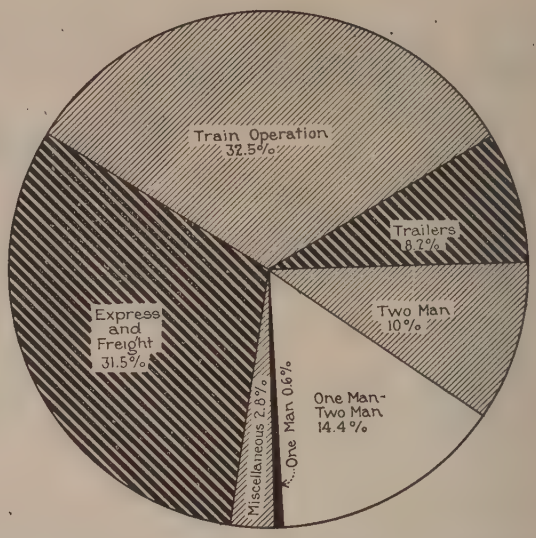


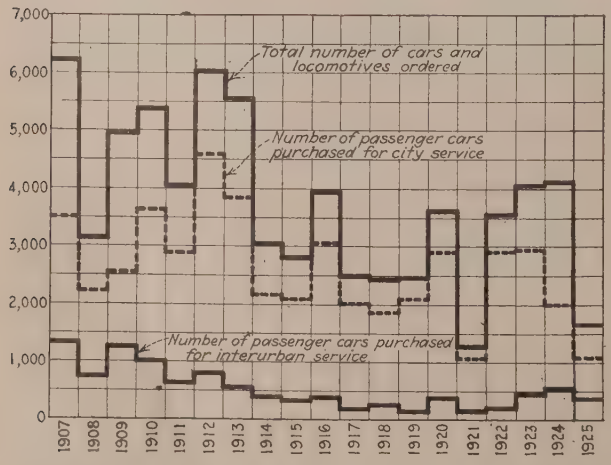
Diagram Showing the Proportion of Total City Cars for Each Type Purchased in 1925



This Shows the Various Types of Interurban Cars Purchased Last Year as a per Cent of the Total for This Class

Table III—Companies Purchasing 20 or More Passenger Cars

Boston Elevated Railway	100	surface cars and 60 rapid transit cars
Pittsburgh Railways	83	one-man two-man city cars and 20 one-man two-man interurban cars
Chicago Rapid Transit Company	100	motor cars for rapid transit service
Philadelphia Rapid Transit Company	100	one-man two-man surface cars
Baltimore & Ohio Railroad	90	motor cars and 10 trailers for rapid transit service
Cleveland Railways built	95	two-man cars in its shops
Georgia Railway & Power Company	40	one-man two-man city cars and 20 two-man cars
Key System Transit Company	42	city cars of two-man type
Chicago, South Shore & South Bend Railway	15	interurban passenger cars, 10 combination passenger and baggage cars, 2 parlor car trailers and 2 diner trailers
New York, New Haven & Hartford Railroad	13	motor cars and 22 trailers for train operation
Grand Rapids Railway	27	one-man two-man city cars
United Electric Railways of Providence	25	one-man two-man city cars
Chicago, North Shore & Milwaukee Railway	20	interurban motor cars and 4 diner trailers
Market Street Railway, San Francisco, built	24	two-man city cars
Columbus Railway & Power Company	23	two-man city cars
United Railways of Baltimore	22	one-man two-man city cars
Manila Electric Railway	20	two-man city cars



Graphical Analysis of Total Cars and Locomotives and Passenger Cars for City and Interurban Purchased During Past Nineteen Years

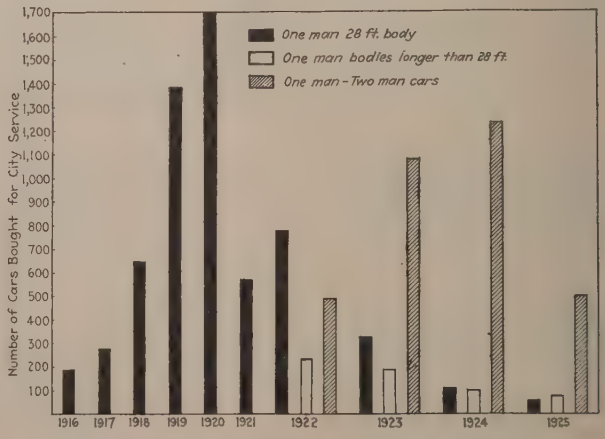
than 28 ft., and eighteen of these one-man units were double-truck cars.

The analysis of cars bought for interurban service shows that those purchased for train operation constitute the greatest number, there being 158 motor cars and 40 trailers or more than 40 per cent of the total interurban passenger cars purchased. Next to these, the one-man two-man type of car proved most popular. There were but three one-man cars purchased for interurban service.

Number of Cars Reported as Junked During Last Four Years

Purchases of electric locomotives were slightly greater last year than for 1924, there being 47 electric locomotives bought during 1925 as compared with 31 during 1924. The order of the Pennsylvania Railroad for 24 locomotives of 75 tons each constitutes the greatest proportion of those ordered. The remaining 23 locomotives were distributed among twelve other companies.

A special comparison of cars ordered during the past ten years is given in Table II. Separate tabulations are



Graph Showing Relative Purchases of One-Man and One-Man, Two-Man Cars During the Past Ten Years

Table IV—Details of Rolling Stock Ordered During 1925

Name of Company	No.	Class	City or Interurban	Motor or Trailer	Single or Double Truck	Length Over All Ft. In.	Total Wt. Light Tons	No. Motors	Seating Capacity	One or Two Man	No. Cars Junked During Year
New England States											
Connecticut											
Connecticut Co.	1	Derrick	City	Motor	Double	40— 0	32.70				
New York New Haven & Hartford R.R.	13	Passenger	Interurban	Motor	Double	80— 1½	87.75	4	120	Train	
New York New Haven & Hartford R.R.	22	Passenger	Interurban	Trailer	Double	80— 1½	52.00		120	Train	
Maine											
Androscoggin Kennebec Ry.											6 CM
Cumberland County Pwr. & Lt. Co.	1	Work	City	Motor	Double	24— 0	21.5				3 CM
York Utilities Co.	1	Work	City	Motor		37— 0					
Massachusetts											
Boston Elevated Ry.	60	Passenger	City	Motor	Double	69— 2½	41.00	2	72	Train	
	100	Passenger	City	Motor	Double	45— 0	15.50	4	48	Both	
Eastern Mass. St. Ry.											82 CM
											14 SP
											5 SM
East Taunton St. Ry.	2	Passenger	City	Motor	Double	36—10	15.25	4	40	Both	
Interstate Consolidated St., Ry.	3	Passenger	City	Motor	Single	28— 0½	8.05	2	33	One	
Interstate Consolidated St., Ry.	5	Passenger	City	Motor	Double	40— 3		4	44	Both	
Middlesex & Boston St. Ry.											46 CM
Springfield St. Ry.	1	Passenger	City	Motor	Double	41— 0	12.00	4	44	Both	
New Hampshire											
Portsmouth El. Ry.											15 CM
Rhode Island											
United Elec. Rys. (Providence)	25	Passenger	City	Motor	Double	41— 0	15.50	4	38	Both	
Total cars New England States	234										
Eastern States											
District of Columbia											
Washington Ry. & Elec. Co.	2	Sweepers	City	Motor	Single	28— 4	16.25				
Maryland											
Baltimore & Ohio R.R. Co. (Staten Is. Lines)	90	Passenger	Interurban	Motor	Double	67— 3½	47.875	2	71	Train	
Baltimore & Ohio R.R. Co. (Staten Is. Lines)	10	Passenger	Interurban	Trailer	Double	67— 3½	41.63		71	Train	
United Rys. & Elec. Co.	22	Passenger	City	Motor	Double	44—10	20.50	2	49	Both	83 CM
United Rys. & Elec. Co.	1	Crane and Plow	City	Motor	Double	44— 0	34.00	4			
New York											
Binghamton Ry.	5	Passenger	City	Motor	Double			4	34	Both	
Brooklyn-Manhattan Transit Co.	2	Freight	City	Trailers	Double						472 CM
Brooklyn-Manhattan Transit Co.	2	Crane	City	Trailer	Double	44— 0	25.00				
Elmira Water, Lt. & R.R. Co.	2	Passenger	City	Motor	Single	27— 9½	18.34	2	32	One	
Interborough Rapid Transit Co.											4 CM
New York & Long Island Tract. Co.	1	Sweeper	City	Motor	Single	28— 6	12.00	2			
Poughkeepsie & Wappinger Falls Ry.											16 CM
Schnectady Ry.	12	Passenger	City	Motor	Double	41— 4½	17.25	4	44	One	
Schnectady Ry.	1	Dump	City	Motor	Double	40— 0	25.00	4			
Southern New York Ry., Inc.											4 IM
Pennsylvania											
Allegheny Valley St. Ry.	1	Sweeper	City	Motor	Single	28— 3	13.00				
Altoona & Logan Valley Elec. Ry.	13	Passenger	City	Motor	Double	41—10	18.20	4	44	Both	25 STCM
Conestoga Traction Co.	3	Passenger	City	Motor	Single	30— 0	9.00	2	31	One	
Harrisburg Railways											6 CMO
Lackawanna & Wyoming Valley R.R.	4	Passenger	Interurban	Motor	Double	60— 6	40.50	2	72	Two	
Lehigh Traction Co.	13	Passenger	City	Motor	Double	48— 8	24.50	4	70	Two	8 CM
Pennsylvania R.R.	8	Passenger	Interurban	Motor	Double	54— 0	58.30	2	72	Train	
Philadelphia Rapid Transit Co.	100	Passenger	City	Motor	Double	45— 6	18.31	2	53	Both	101 CM
Philadelphia Rapid Tranist Co.	1	El. Crane	City	Motor	Double	55— 0	46.82	4			49 Work
Philadelphia Rys.											3 CM
Philadelphia & West Chester Trac. Co.	12	Passenger	Interurban	Motor	Double	47—10	29.82	4	62	Two	
Pittsburgh Railways	83	Passenger	City	Motor	Double	45— 2	18.75	4	52	Both	
Pittsburgh Railways	20	Passenger	Interurban	Motor	Double	45— 2	19.75	4	50	Both	
Reading Transit Co.	1	Sweeper	City	Motor	Double						5 CMO
Scranton Ry.	10	Passenger	City	Motor	Double	41—10	18.50	4	44	Both	
Shamokin & Mt. Carmel Transit Co.	3	Passenger	Interurban	Motor	Double	45— 0	17.89	4	48	Both	
Stroudsburg Traction Co.											2 CM
Webster, Monessen, Belle Vernon & Fayette City St. Ry.	3	Passenger	City	Motor	Double	41— 2	17.50	4	46	Both	
West Side Elec. St. Ry.	3	Passenger	City	Motor	Double	41— 2	17.50	4	46	Both	
Virginia											
Virginia Ry. & Pwr.	15	Passenger	City	Motor	Double	40— 1			40	Both	
Total cars Eastern States	443										
Central States											
Illinois											
Chicago North Shore & Milwaukee R.R.	3	Freight	Interurban	Motor	Double	36— 0					4 CM
	20	Passenger	Interurban	Motor	Double	55— 3½	51.00	4	54	Train	
	4	Diner	Interurban	Trailer	Double	55— 3½	51.50		24	Train	
	5	Freight	Interurban	Trailer	Double	50— 0	34.00			Train	
Chicago Rapid Transit Co.	100	Passenger	City	Motor	Double					Train	
East St. Louis & Suburban Ry.	1	Dump	City	Trailer	Double	40— 0	16.00				
Illinois Pwr. & Lt. Corp. (Galesburg)											14 CM
Illinois Traction Inc.	100	Freight	Interurban	Trailer	Double	36— 0				Train	
Kewanee & Galva Ry.	1	Passenger	Interurban	Motor	Double	40— 3	13.00	4	50	One	
Indiana											
Burch Grove Traction Corp.											2 IM
Chicago South Shore & South Bend Ry.	15	Passenger	Interurban	Motor	Double	60— 0			56	Train	
	10	Passenger Baggage	Interurban	Motor	Double	60— 0			44	Train	
	2	Parlor	Interurban	Trailer	Double	64— 0			37	Train	
	2	Diner	Interurban	Trailer	Double	64— 0			24	Train	
Evansville & Ohio Valley Ry.	6	Passenger	Interurban	Motor	Double	44— 4	17.00	4	48	Both	
Gary Street Ry.	5	Passenger	City	Motor	Single	30— 0	6.00	2	32	One	
Gary & Hobart Trac. Co.	3	Passenger	Interurban	Motor	Double	44— 8½	21.26	4	44	Both	
Indiana Service Corp.	5	Passenger	Interurban	Motor	Double	61— 6	46.00	4	50	Two	
	6	Dump	Interurban	Trailer	Double	40— 0	17.00				
	2	Passenger	Interurban	Motor	Double	61— 6	42.50	2	50	Train	
Interstate Public Service Co.	1	Parlor & Dining	Interurban	Motor	Double	59— 0	46.50	2	24	Two	
Interstate Public Service Co.	6	Work	Interurban	Trailer	Double	40— 0	18.30				
Northern Indiana Pwr. Co.	2	Freight	Interurban	Trailer	Double	25— 0					
Union Traction Co. of Indiana	15	Passenger	Interurban	Motor	Double	65— 5	45.00	4	60	Two	
Iowa											
Iowa Southern Utilities Corp. (Burlington)	1	Sweeper	City	Motor							

Table IV—Details of Rolling Stock Ordered During 1925—(Continued)

Name of Company	No.	Class	City or Interurban	Motor or Trailer	Single or Double Truck	Length Over All Ft. In.	Total Wt. Light Tons	No. Motors	Seating Capacity	One or Two Man	No. Cars Junked During Year
Kentucky											
Kentucky Traction & Terminal Co	2	Passenger	City	Motor	Single	26— 6	9.00	2	24	One	2 CM
Michigan											
Dept. Street Railways (Detroit)	6	Dump	City	Trailer	Double	40— 0	17.00				
Dept. Street Railways (Detroit)	2	Dump	City	Motor	Double	40— 0	25.00	4			10 CM
Detroit United Ry.											30 CM 2 SM
Grand Rapids Ry.	27	Passenger	City	Motor	Double	37— 1		4	43	Both	
Lake Superior District Power Co.	1	Passenger	Interurban	Motor	Double	40— 6	13.00	4	44	One	
Menominee & Marinette Lt. & Trac. Co.											4 CM
Minnesota											
Twin City Rapid Transit Co	5	Passenger	City	Motor	Double	35—10	12.10	4	43	One	
	1	Passenger	City	Motor	Double	46— 8	12.25	4	57	Two	
	1	Passenger	City	Motor	Double	46— 8	13.40	4	50	Two	
Missouri											
Missouri & Kansas Ry.	2	Passenger	Interurban	Motor	Double	45— 0	20.00	4	54	Both	
Missouri & Kansas Ry.	1	Passenger	Interurban	Motor	Double	47— 0	21.00	4	54	Both	
United Rys. Co. of St. Louis											32 CM
Ohio											
Cincinnati St. Ry. (Traction Co.)	1	Dump	City	Trailer	Double	42— 0	34.00	4			
Cincinnati Trac. Co.	1	Crane	City	Motor	Double	44— 0	34.00	4			
Cincinnati Trac. Co.	1	Dump	City	Trailer	Double	40— 0	16.00				
Cleveland Railways	95	Passenger	City	Motor	Double	51— 2	20.80	4	55	Two	
	4	Crane	City	Motor	Double	44— 0	34.00	4			
	4	Dump	City	Motor	Double	40— 0	25.00	4			
	2	Dump	City	Trailer	Double	40— 0	16.00				
	2	Rail cars	City	Trailer	Double	64— 0					
	3	Sweepers	City	Motor	Double						
Cleveland So. Western Ry. & Lt. Co.											8 CM
Columbus, Delaware & Marion Elec. Co.	2	Parlor	Interurban	Motor	Double	63— 4	56.75			Two	
Columbus Ry. Pwr. & Lt. Co.	23	Passenger	City	Motor	Double	45— 3½	18.31	4	48	Two	
Dayton, Springfield & Xenia Southern Ry.	1	Passenger	Interurban	Motor	Double	42— 9	13.00	4	52	Both	
Lima Toledo R.R. Co.	10	Freight	Interurban	Trailer	Double	49— 5	20.00				
Northern Ohio Trac. & Lt. Co.	25	Freight	Interurban	Trailer	Double	49— 8					
Northern Ohio Trac. & Lt. Co.	6	Freight	Interurban	Trailers	Double	42— 6½					
Ohio River Elec. Ry. Co.	7	Passenger	City	Motor	Single	26— 6	9.00	2	24	One	
Pennsylvania-Ohio Elec. Co.	13	Passenger	City	Motor	Double	43— 0	16.00	4	44	Both	14 CM 18 IM 1 IT
Stark Elec. Co.	1	Dump	Interurban	Trailer	Double	40— 0	16.00				
Toledo, Bowling Green & Southern Trac. Co.	1	Freight	Interurban	Motor	Double	51— 0	39.50				
Youngstown Municipal Ry.	13	Passenger	City	Motor	Double	43— 0	16.00	4	44	Both	
Youngstown & Surburban Ry.	4	Passenger	Interurban	Motor	Double	41—10	17.80	4	44	Both	
Wisconsin											
Lake Superior Dist. Pwr. Co.	1	Passenger	Interurban	Motor	Double	40— 3	17.25	4	50	Both	
Madison Railways	12	Passenger	City	Motor	Single	28—10	9.00	2	32	One	
Milwaukee Elec. Ry. Lt. Co.	2	Passenger	City	Trailer	Double	53— 5	18.10				16 CM 2 Salt 1 Work
Wisconsin Pwr. & Lt. Co.											1 IM
Total cars Central States	597										
Southern States											
Alabama											
Alabama Pwr. Co.	2	Passenger	City	Motor	Single	32— 0	7.50	2	32	One	
Mobile Light & R.R. Co.	2	Flat	City	Motor	Double	36— 0	6.00				3 CM
Mobile Light & R.R. Co.	2	Work	City	Motor	Single	24— 0	4.00				
Arkansas											
Pine Bluff Co.	2	Passenger	City	Motor	Single	28— 0½	8.00	2	32	One	
Florida											
Coral Gables Utility Corp.	2	Passenger	Interurban	Motor	Double	40— 1		4	44	Both	
	1	Passenger	Interurban	Motor	Double	47— 8	18.82	4	52	Both	
	3	Passenger	City	Motor	Double	28— 0½	8.61	2	33	One	
	9	Passenger	Interurban	Motor	Double			4		Both	
Miami Trac. Co.	15	Passenger	City	Motor	Double	28— 0½	8.61	2	33	One	
Municipal Railway of South Jacksonville	4	Passenger	City	Motor	Single	28— 0½				One	
Tampa Elec. Co.	7	Passenger	City	Motor	Double	45— 7	16.00	4	52	Both	
Georgia											
Atlanta Northern Ry.	5	Passenger	Interurban	Motor	Double	46— 5	18.00	4	51	Both	
Columbus Elec. & Pwr. Co.											16 CM
Georgia Ry. & Pwr. Co.	20	Passenger	City	Motor	Double	46— 2	18.22	4	48	Two	60 CM
Georgia Ry. & Pwr. Co.	40	Passenger	City	Motor	Double	46— 4	18.64	4	50	Both	
Savanah Elec. & Pwr. Co.											4 CM
North Carolina											
Ashville Pwr. & Light Co.	12	Passenger	City	Motor	Single	28— 0½	8.34	2	33	One	
Ashville Pwr. & Light Co.	4	Passenger	City	Motor	Single	33— 0	11.10	2	40	One	
Tide Water Power Co.											3 CM
Tennessee											
Knoxville Pwr. & Lt. Co.	16	Passenger	City	Motor	Single	29— 6	8.50	2	29	One	
Union Trac. Co.	1	Passenger	Interurban	Motor	Double	43— 1	15.00	4	42	Two	
	1	Freight	Interurban	Motor	Double	43— 1	15.00				
	1	Work	Interurban	Trailer							
Total cars Southern States	149										
Western States											
California											
Key System Transit Co.	41	Passenger	City	Motor	Double	45— 6	20.50	4	48	Two	10 CM
	1	Passenger	City	Motor	Double	48— 0	24.00	4	52	Two	
	1	Work	City	Trailer	Double	20— 4					
Market Street Ry.	24	Passenger	City	Motor	Double	47— 0	19.50	4	50	Two	10 CM
Pacific Electric Ry.											14 CM 6 CS 33 IF
San Diego El. Ry.	6	Work	City	Trailer	Double	40— 0	23.00				
Kansas											
Topeka Ry.											10 CM
Oklahoma											
Northeast Oklahoma R.R.											2 CM
klahoma Ry.	10	Passenger	City	Motor	Single	30— 0	8.00	2	32	One	

Table IV—Details of Rolling Stock Ordered During 1925—(Concluded)

Name of Company	No.	Class	City or Interurban	Motor or Trailer	Single or Double Truck	Length Over All Ft. In.	Total Wt. Light Tons	No. Motors	Seating Capacity	One or Two Man	No. Cars Junked During Year
Oregon											
Portland Electric Pwr. Co.											4 CM
Texas											
El Paso Elec. Ry. Co.											5 CM
Southeastern Traction Co.	1	Passenger	Interurban	Motor	Double	30— 0	10.50	2	32	One	
Total cars Western States	84										
Cuba											
Havana Central R.R.	8	Passenger	Interurban	Motor	Double	51— 9	25.10	4	60	Two	
Philippine Islands											
Manila Electric Co.	20	Passenger	City	Motor	Double	41— 5	14.00	2	60	Two	
Total cars Extraterritorial	28										
Dominion of Canada											
British Columbia											
British Columbia El. Ry.	6	Passenger	City	Motor	Double	48— 8	23.15	4	48	Two	1 CL
	6	Passenger	City	Trailer	Double	48— 8	22.90		55	Train	1 CS
	1	Flat	Interurban	Trailer	Double	37— 0	15.50				
	1	Work	City	Motor	Single	10— 0	8.00	2			
New Brunswick											
New Brunswick Pwr. Co.	2	Passenger	City	Motor	Single	31— 0	12.00	2	30	One	
Ontario											
Cornwall Street Ry.	1	Passenger	City	Motor	Double	30— 0	12.00	2	30	One	
Hydro-Electric Pwr. Comm.	3	Passenger	City	Motor	Double	45— 4	22.00	4	44	Both	
Hydro-Electric Pwr. Comm.	1	Passenger	Interurban	Motor	Double	50— 0	27.00	4	54	Two	
Niagara, St. Catharines & Toronto Ry.	12	Passenger	City	Motor	Double	46— 6	14.90	4	44	Both	
Oshawa Ry.	1	Work	City	Motor							
Ottawa Electric Ry.	10	Passenger	City	Motor	Double	45— 0	19.50	4	54	Both	
Ottawa Electric Ry.	2	Sweeper	City	Motor	Single	24—10		2			
Public Utilities Comm. of Kitchener	1	Sweeper	City	Motor	Single	22— 0					
Quebec											
Canadian National Rys.	12	Passenger	Interurban	Motor	Double	42— 6	15.00	4	44	Both	
Montreal Tramways	3	Sweeper	City	Motor	Single	24—10	16.00	2			
	1	Plow	City	Motor	Single	26— 0	19.00	2			
	1	Dump	City	Motor	Double	40— 0	25.15	4			
	2	Rail	City	Motor	Double	42— 0	24.50	4			
	4	Flat	City	Motor	Double	34— 0	20.75				48 CM
New Foundland Lt. & Pwr. Co.	7	Passenger	City	Motor	Single	28— 0½	11.00	2	30	One	
Total cars Canada	77										

Abbreviations used for cars junked.

CM—city motor cars.
CMO—open city motor cars.
CS—city service cars.
CL—city line cars.
STCM—single truck city motor cars.
SP—snow plows.
SM—service motor cars.
IM—interurban motor cars.
IT—interurban trailers.
IF—interurban freight cars.

given for cars in city service and those in interurban service. Referring to this table, it is interesting to note how the number of safety cars purchased increased each year from 1916 up to and including 1920, and during the same period how the number of large two-man cars gradually decreased. A comparison by percentage that the number of cars purchased bears to the total shows that the highest percentage for safety cars was reached in 1919. One-man, two-man cars increased each year from 1922 to 1924, but the number purchased during 1925 has fallen off to less than one-half those purchased during 1924.

Details of rolling stock ordered by individual companies are given in Table IV. The railways in each state are grouped and the various states are arranged into groups which follow the same arrangement as that used by the United States Census Bureau. This arrangement is the same as that used for the 1924 statistics. Companies in Canada, Cuba and the Philippine Islands are listed separately. In addition to listing the number of cars ordered by the various companies, this table classifies the cars as to type of service and gives information as to length, seating capacity, weight, number of motors and general characteristics, such as motor or trailer and single or double truck.

The recapitulation by districts shows that very few cars were bought by companies in the Western states, there being but five companies that reported a total of 83 city cars purchased and one company that reported new interurban cars. During 1924 this district showed the greatest number of cars purchased. Eighteen companies reported a total of 1,663 cars and locomotives bought for city and interurban service. Omitting express, freight, service and miscellaneous cars, there were 76 passenger cars purchased for city service during 1925, as against 271 passenger cars for city service during 1924. Only one interurban car was reported for 1925 as against 27 purchased during 1924. Comparison of other districts shows that the New England district purchased 234 cars during 1925 as against 92 in 1924; the Eastern states, 443 during 1925 as compared with 1,206 in 1924; the Central states, 597 in 1925 as against 849 in 1924; and the Southern states, 149 in 1925 as compared with 158 in 1924. Canada reported 77 cars for 1925 as against 98 for 1924.

For convenience in comparing detailed figures, and in order to show at a glance the relative amount of rolling stock purchased by the various railways year by year, Table I has been prepared. This gives the total number of cars ordered each year since 1907. Cars purchased are divided into four classes: Passenger cars, both city and interurban; freight, express and miscellaneous cars; and electric locomotives. The miscellaneous cars include service cars, snow plows, sweepers, work cars, etc. Three graphs have been prepared to show graphically the number of cars ordered each year since 1916. One of these gives the total number of cars and locomotives; the second one gives purchases of passenger cars for city service and the third interurban cars bought for passenger service. The number of passenger cars bought for city service annually has been decreasing since 1923. The number purchased in 1925 is approximately the same as for 1921, which is the lowest year recorded. Purchases of interurban cars

increased from 1921 to 1924, but 1925 shows a drop of about six-tenths of the number purchased in 1924.

A study of the various one-man two-man cars ordered during 1925 for city service shows that they run quite uniform in length, weight and seating capacity. Lengths vary from 36 ft. 10 in. to 47 ft. 7 in., weights from 14.9 tons to 20.5 tons, and seating capacity from 34 to 54. The weighted average for all cars of this class purchased during 1925 gives a length of 44 ft. 1 in., a weight of 18.07 tons and a seating capacity of 48. It is interesting to compare these dimensions with similar ones made from a study of the one-man two-man cars ordered in 1923. The weighted average for the cars was 45 ft. 1 in. long with a seating capacity of 54. It thus appears that the tendency during 1925 is to use a car slightly smaller in size than those of 1923. In general design, the cars have remained about the same for the last three years. Wheels of 26-in. diameter are most commonly used and platforms are either level with the car floor or with a slight ramp, a single intermediate step being used between the roadway and the car platform. Arch type roof construction is used in most cases.

The number of cars junked during 1925 is less than for 1923 and 1924, but is slightly greater than for 1922, there being a total of 1,340 cars reported as scrapped during 1925. The majority of these are motor cars in city service. The largest number of cars reported as junked by individual railways was 472 by the Brooklyn-Manhattan Transit Corporation and 101 by the Philadelphia Rapid Transit Company, 83 by the United Railways & Electric Company of Baltimore, and 82 by the Eastern Massachusetts Street Railway. An accompanying diagram shows graphically the number of cars junked during the past four years.

The accompanying tables and graphical charts of rolling stock were prepared from information obtained from replies to questionnaires sent to all the electric railways in the United States and Canada. This was supplemented by information which had been previously obtained and published in ELECTRIC RAILWAY JOURNAL, and from lists of cars furnished by the principal car manufacturers. It is quite impossible to receive replies from all railways when a definite time for publication must be met, but this year's information has been particularly complete and the lists received from manufacturers has enabled a careful check to be made of the figures obtained from the various railways. In some cases where replies were not received from the operating companies, the information furnished by the car manufacturers has been used in the tables.

Table V—Electric Locomotives Ordered During 1925

Name of Railway	Number	Weight, Tons	Length Over All Ft. In.
New England States			
Aroostook Valley R.R.	1	50	.....
New York, New Haven & Hartford R.R.	3	80	37—6
Eastern States			
Delaware, Lackawanna & Western R.R.	1	50	29—0
New York Rapid Transit Corp.	1	50	37—4
Pennsylvania R.R.	24	75	.....
Central States			
Chicago, South Shore & South Bend Ry.	4	80	.....
Great Northern R.R.	4	177	.....
Michigan Central R.R.	2	120	42—2
St. Louis and Belleville El. Ry.	1	80	40—0
Western States			
San Diego Electric Ry.	1	50	40—0
Cuba			
Hershey Cuban Ry.	3	60	37—4
Canada			
Montreal & Southern Counties Ry.	1	50	.....
Oshawa Ry.	1	50	32—0
Total	47		

Table VI—Recapitulation by Districts of Cars Ordered During 1925

	New England States	Eastern States	Central States	Southern States	Western States	Extra territorial	Total for United States	Total for Canada	Grand Total
Number of companies reporting new cars	7	21	36	12	5	2	83	11	94
City Service									
One-man cars, 28-ft. body	3	...	9	36	..	..	48	7	55
One-man cars with bodies longer than 28-ft.									
Single truck	...	5	17	22	10	..	54	2	56
Double truck	...	12	5	...	..	..	17	1	18
One-man, two-man cars	133	254	53	47	..	..	487	25	512
Two-man cars (surface)	...	13	120	20	66	20	239	6	245
Motor cars for rapid transit lines	60	...	100	...	..	..	160	..	160
Trailers	...	..	2	...	..	..	2	6	8
Service and miscellaneous cars	3	12	28	4	7	..	54	16	70
Total cars, city service	199	296	334	129	83	20	1,061	63	1,124
Interurban Service									
One-man, double-truck cars	...	...	2	...	1	..	3	..	3
One-man, two-man cars	...	23	18	17	..	..	58	12	70
Two-man cars	...	16	23	1	..	8	48	1	49
Trailers	22	10	8	...	..	..	40	..	40
Motor cars for train service	13	98	47	...	..	..	158	..	158
Express and freight cars	...	...	152	1	..	..	153	1	154
Miscellaneous cars	...	...	13	1	..	..	14	..	14
Total cars interurban service	35	147	263	20	1	8	474	14	488
Electric locomotives	4	26	11	...	1	3	45	2	47
Total cars and electric locomotives	238	469	608	149	85	31	1,580	79	1,659

900 Men Rush Rehabilitation Work on South Shore Road

MANY of the tasks in the rehabilitation work begun when the Chicago, South Shore & South Bend Railroad came under the control of Samuel Insull and associates had been completed on Dec. 1. Work in other phases of this program will continue as long as weather permits. More than 900 men were still engaged in this work on Dec. 1.

Some of the work which has been completed follows:

Ten miles of 70 and 80 lb. rail between Kensington and Hammond replaced with 100-lb. rail.

Entire track from South Bend to Kensington resurfaced with more than 300 cars of cinder ballast.

New angle bars installed at all track joints, approximately 11,000 pairs being used.

All block and other signals rebuilt, including wiring and controls.

New telephone lines for company communication installed.

Entire right-of-way cleared of undergrowth and weeds.

Portions of the rehabilitation work now under way are:

Rock ballasting of the section from Kensington to Hammond 60 per cent completed.

Steel trusses to support trolley wire on the above section in place. These trusses are mounted on the wooden poles.

Side tracks being extended and double-ended to take care of increase in freight business.

Freight stations enlarged and renewed.

Four new electric substations now under way and work is to start soon on a fifth.

New stations at Michigan City and South Bend in use and Gary and Tremont passenger stations being rebuilt.

Twenty-eight more passenger trains are being operated by the South Shore Line than at this time a year ago. Two of these are limited trains. The others are distributed between local and express service.

34 per Cent of Passenger Cars Are Over Twenty Years Old

Less than Half of All Cars Now in Electric Railway Service Were Purchased in the Last Fifteen Years—Greater Number of New Cars Are Needed to Modernize Industry than Was Anticipated —Nationwide Survey More than Confirms Previous Estimates

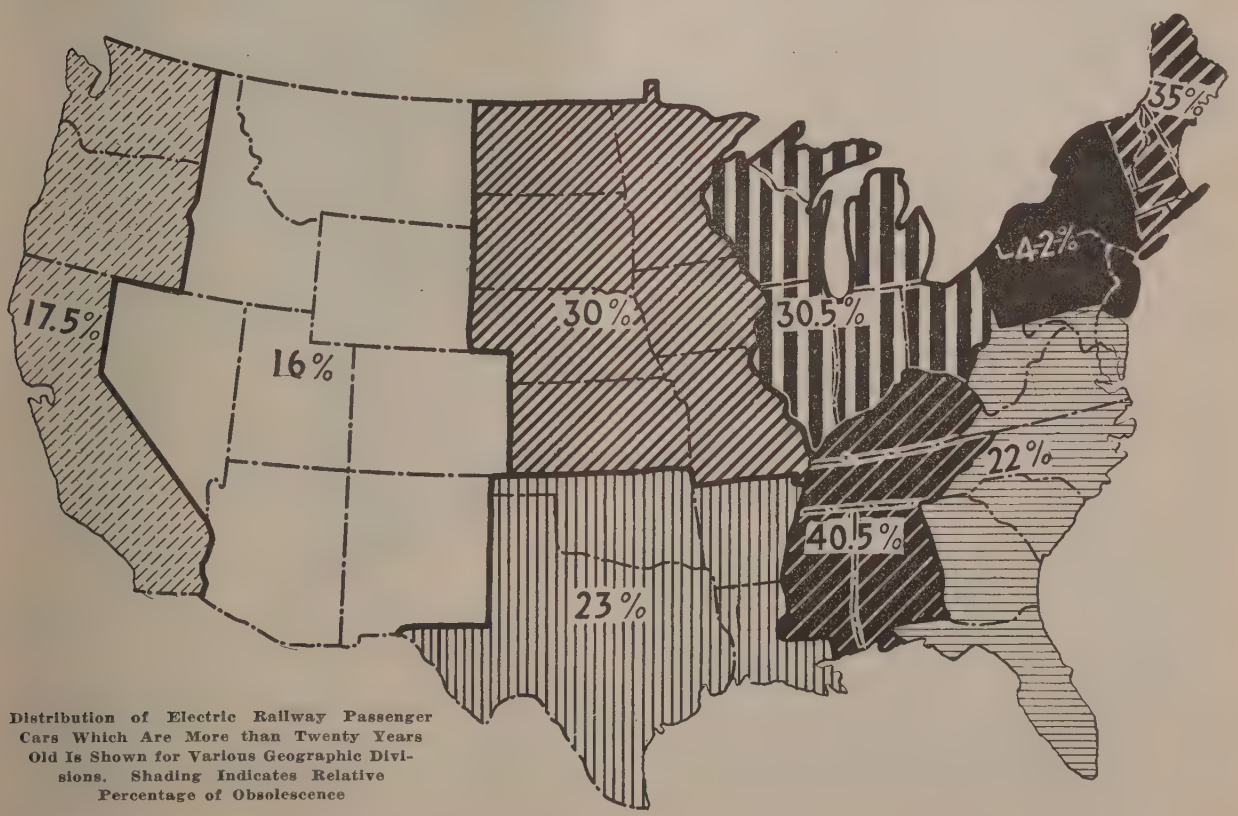
PURCHASE of more than 28,000 electric railway passenger cars is necessary in the near future if the industry is to be brought up to the high degree of efficiency necessary under present-day conditions. This is based only on replacement of those cars which are today twenty years of age or older. Many cars built in more recent periods may rightfully be considered obsolete equipment, so that an even greater number of new cars is needed to modernize fully electric railway rolling stock. This estimate would provide for replacement of obsolete cars only. It makes no provision for expansion of service which is known to be necessary in many localities if the patrons are to be given satisfactory accommodations.

Purchase of such a large quantity of equipment involves the expenditure of a very large amount of money. If the average cost of a car is $10,000, which is undoubtedly low today, it means that $280,000,000 will be required. While such a task appears herculean, it is vital if the industry is to keep pace. For if the program of replacement is put off, the problem of providing new equipment of a character to attract patronage and win good will becomes cumulatively more difficult.

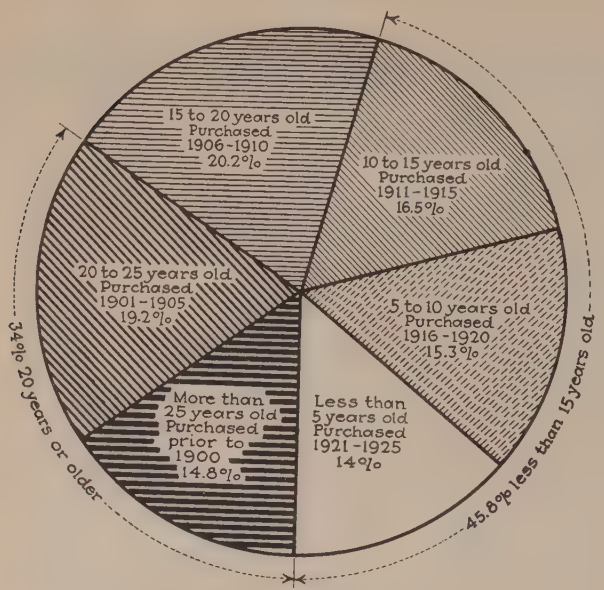
These statements are based on a survey made by this paper in the past few weeks, in which information has been obtained covering the industry in the entire United States. The results have more than confirmed previous estimates made by ELECTRIC RAILWAY JOURNAL, the American Electric Railway Association and others in position to analyze available statistics. The

CLASSIFICATION OF ELECTRIC RAILWAY PASSENGER CARS BY AGE

Age, Years	Number of Cars	Per Cent of Total
More than 25	11,740	14.2
20 to 25	16,345	19.8
15 to 20	16,945	20.5
10 to 15	13,740	16.8
5 to 10	12,440	15.1
Less than 5	11,240	13.6
	82,450	100.0



Distribution of Electric Railway Passenger Cars Which Are More than Twenty Years Old Is Shown for Various Geographic Divisions. Shading Indicates Relative Percentage of Obsolescence



Inventory of City Cars Shows 34 per Cent That Are Twenty Years or More Old. In Addition 20.2 per Cent Have Seen Fifteen to Twenty Years of Service

more complete information on which the new figures are based shows the problem to be even more serious than had been anticipated in the earlier studies. In these estimates two general methods of approach have been used. One had for its object a determination of the deficiency in annual replacements, assuming a twenty-year life as a basis. The other was worked out by subtracting the purchases of new equipment each year since 1907 from the total number of cars owned. In this latter estimate the object was to find the number of passenger cars which were purchased previous to the development of many of the improvements which are now included in modern cars. These estimates, based upon figures compiled by the United States Census Bureau and statistics published annually in ELECTRIC RAILWAY JOURNAL, have indicated that there are 25,000 obsolete electric railway cars in service. An article covering this subject was published in ELECTRIC RAILWAY JOURNAL for Nov. 14, 1925, page 853.

SURVEY COVERED ENTIRE COUNTRY

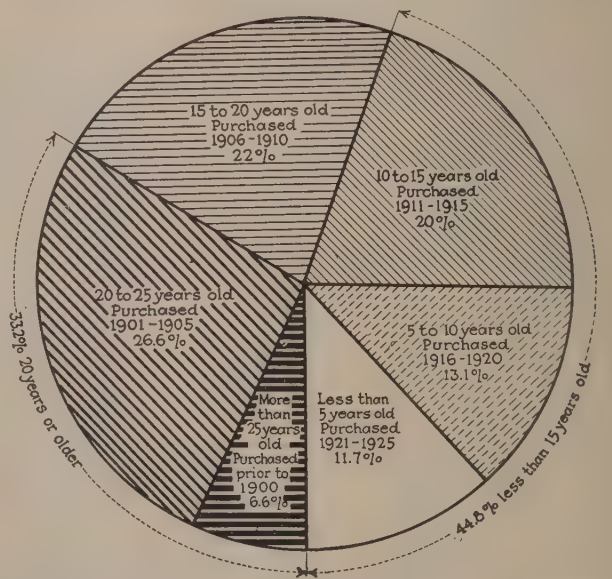
The more comprehensive analysis of the age of the equipment in various sections of the country has been obtained from a nation-wide survey published here for the first time. Questionnaires were sent to every electric railway property in the United States. The returns were supplemented by records compiled by the General Electric Company and the Westinghouse Electric & Manufacturing Company through personal contact of representatives of their division offices with the electric railway properties in various sections of the country.

The importance of directing attention to the replacement of obsolete equipment is strikingly brought out. Information obtained shows that 34 per cent of the total number of passenger cars are more than twenty years old. There are at present 82,450 passenger cars in the United States. This figure was compiled by ELECTRIC RAILWAY JOURNAL a year ago and published in the issue of March 7, 1925, page 368. Similar figures are collected annually for the McGraw Electric Railway Directory. Applying the above proportion of 34 per cent indicates that over 28,000 cars are more than twenty years old. Most of the major developments that are included in modern car design and construction have been made considerably inside of a twenty-year period. Consequently the number of cars which do not incorporate these developments is considerably above the figure given.

Further analysis of the age of cars by geographical districts and by class of service is shown in the table and on the accompanying map. It indicates the relative conditions in various parts of the country. In the Middle Atlantic States, comprising New York, New Jersey and Pennsylvania, it is seen that 42 per cent of the existing equipment is over twenty years old. In the East South Central States, comprising Kentucky, Tennessee, Alabama and Mississippi, 40.5 per cent of the equipment is shown to be more than twenty years old. The proportion ranges down through the remainder of the nine divisions into which the country is divided to 16 per cent for the Mountain States of Idaho, Colorado, Utah, Wyoming, New Mexico, Arizona, Nevada and Montana. It is of interest in passing to note that the sections which show the largest proportion of equipment over twenty years old correspond to those in which construction of electric railway lines progressed rapidly during the earlier years of the industry's history.

The per cents indicating total number of obsolete cars follow the condition of city rather than interurban equipment. This is primarily due to the greater number of city cars owned. In the table on page 27 are shown the per cents for both classes of service, divided between the various geographic sections. Here, it will be noted, the distribution of obsolete interurban cars varies considerably from the city distribution.

Returns from this survey have been compiled to show the relative age of passenger cars in five-year periods



Condition of Interurban Equipment Is Illustrated by This Diagram. the Largest Group of Cars Is from Twenty to Twenty-five Years Old

since 1900 and those purchased previous to that year. These have been further subdivided as between city and interurban cars. The results are shown graphically in the accompanying circle diagrams.

Under the city classification 14.8 per cent were pur-

chased prior to 1900. Thus they were found to be more than 25 years old; 19.2 per cent fall in the group having an age of between twenty and 25 years. This makes a total of 34 per cent that have been in service for twenty years or longer. There is a group comprising 20.2 per cent which are from fifteen to twenty years old. These would also probably fall into an obsolete classification on the basis of the developments which have been made in car construction since they were built.

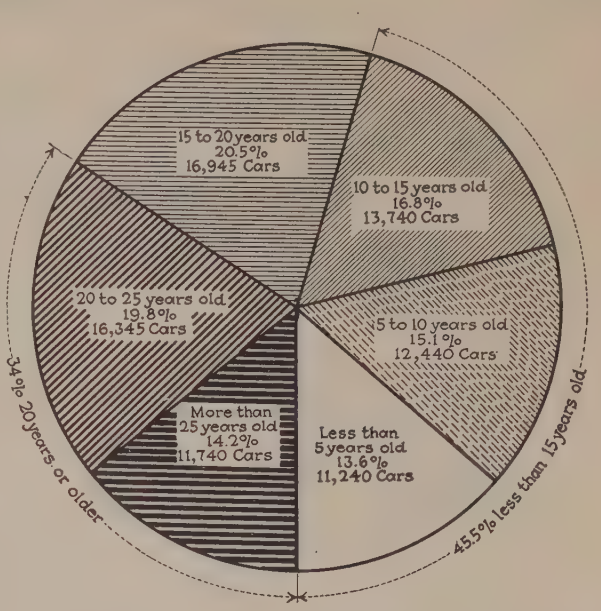
Of the cars which may be classed as more nearly modern, 16.5 per cent are from ten to fifteen years old, 15.3 per cent are five to ten years old and 14 per cent are less than five years old. This makes a total of 45.8 per cent of the total number of city cars that have been purchased within fifteen years.

A similar division has been made of the interurban cars—6.6 per cent were purchased previous to 1900 and are more than 25 years old; 26.6 per cent are twenty to 25 years old; 22 per cent fall into the group from fifteen to twenty years. Of the cars that are less than fifteen years old 20 per cent are between ten and fifteen years, 13.1 per cent fall between five and ten years and 11.7 per cent were purchased within the last five years.

An interesting check is obtained on the estimates made in preparing the chart on page 854 of the Nov. 14 issue, in which the conclusion that there are 25,000 obsolete cars was derived. In compiling the earlier chart the assumption was made that all cars purchased since 1907 are still in service. It was pointed out at that time that a certain number of comparatively modern cars had been destroyed by fire, accident and other causes. No method of approximating this number was available at that time. The present survey gives a basis for comparison with the original estimate. The diagram for city and interurban cars combined shows that 45.5 per cent of the total number of cars have been purchased within the last fifteen years. This is equivalent to approximately 37,500 cars on the basis of last year's estimate of 82,450 cars. The total number of cars purchased during these last fifteen years, as shown in the tabulation in another article in this issue for cars purchased each year since 1907, amounts to approximately 42,700. The difference of 5,200 cars represents those destroyed by fire, accident and other causes and those abandoned and not reported for various reasons.

Passenger Cars Over Twenty Years Old by Geographical Districts

Geographical District	Per Cent of Passenger Cars Over 20 Years Old — City	Interurban	Total
New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)	29.1	62.6	35
Middle Atlantic (New York, New Jersey, Pennsylvania)	42.6	36.1	42
East North Central (Ohio, Indiana, Illinois, Michigan, Wisconsin)	30.4	30	30.4
West North Central (Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas)	28.2	46.8	30
South Atlantic (Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida)	20.6	42	22
East South Central (Kentucky, Tennessee, Alabama, Mississippi)	40.8	34.5	40.5
West South Central (Arkansas, Louisiana, Oklahoma, Texas)	26.1	7.1	23
Mountain (Idaho, Colorado, Utah, Wyoming, New Mexico, Arizona, Nevada, Montana)	17.1	3.8	16
Pacific (Washington, Oregon, California)	17.1	23	17.5



Combined Interurban and City Cars Are Here Divided in Five-Year Periods. Cars Purchased Previous to 1900 Are Grouped Together. 34 per Cent of the Total Are at Least Twenty Years Old

Consideration of the combined diagram for both city and interurban cars gives a graphical presentation of the general condition of equipment. From this chart there are 14.2 per cent of the total number of passenger cars that are more than 25 years old. This amounts to 11,740 cars; 19.8 per cent fall in the group ranging from twenty to 25 years and aggregate 16,345 cars. Thus, the total of the combined city and interurban cars more than twenty years old amounts to 34 per cent, or 28,085. In addition there are 16,945 cars that are fifteen to twenty years old and amount to 20.5 per cent of the total. Unquestionably, most of the cars in this last group do not include modern developments in construction and design. Weight reduction, low floors, small wheels, higher grade materials and many other improvements have been introduced within comparatively recent years. Many developments have also been made in trucks, motors and control, air brakes, door controls and other items of equipment.

This analysis has been presented in considerable detail because of the importance of the subject from the standpoint of the future progress of the industry. It has been repeatedly pointed out that electric railway transportation has survived through a period of serious economic and operating handicaps. The condition of electric railway equipment today is in large measure attributable to the long series of events that have produced rising costs on the one hand and limited income on the other. But the industry today more clearly than ever before occupies a sound economic position as a fundamental necessity in modern community development. There has been a growing conviction that it is on the threshold of an era of renewed prosperity and usefulness. Attention to the subject of replacing obsolete equipment is shown by this analysis to be of paramount importance at this time.

Heavy Traction Progress in 1925

Many Projects Completed, both in This Country and Abroad—Increasing Attention Being Paid to Electric Operation on Trunk Lines

MORE progress in steam railroad electrification was made in 1925 than for any year since 1919. In fact, the track equipped for electric operation was 20 miles more than the entire electrifications in 1920 to 1925, inclusive. The work was done by five roads. The Virginian Railway easily stands at the head of the list. There the loads to be hauled are of the heaviest character. The entire installation has been done in a manner not only to replace the steam service, but to increase the capacity largely. That the result has been accomplished is shown in the article published in this paper on Oct. 3, following inauguration of the system between Mullins and Clarks Gap, W. Va. At that time completion of the system to Roanoke had been deferred, since a question had arisen regarding ownership and operation of the property. Since then the objections have been cleared away and it is considered probable that the project will be completed with the present year.

Several Existing Systems Extended

The Norfolk & Western Railway also added materially to its electrified mileage during the year. The initial electrification of this road was completed some ten years ago. Since then the electrified mileage has been added to year by year, thus increasing the utility of the electrification. Both this road and the Virginian use the same electrical system, 11,000 volts, 25 cycles, single phase. As they operate in the same territory, carry the same class of freight and are financially connected the interchangeability of equipment is certain to be of great advantage.

Of an entirely different character is the electrification of the Staten Island Rapid Transit system. This road, which is a subsidiary of the Baltimore & Ohio Railroad, handles an extensive passenger business, largely to and from the ferries to Brooklyn and Manhattan. The installation has been planned so that in case the city of New York connects Staten Island with Brooklyn by means of a tunnel, the trains can be operated over the Brooklyn-Manhattan Transit Corporation's subway system. Accordingly the 600-volt direct-current system is used. Electrification of the Staten Island line already has made a marked improvement in transportation in the Borough of Richmond. Train speeds have been increased and more service is being operated than was feasible with locomotive-hauled steam trains.

The Long Island Railroad's 600-volt direct-current system was extended to Babylon during the year, a distance of 27 miles. This converts a large portion of the Montauk Division to electric operation. It has made possible the operation of through trains to New York, eliminating the transfer at Jamaica.

The New Haven Railroad inaugurated electric operation on the Danbury branch, a 25-mile line connecting South Norwalk on the main line with Danbury. The purpose of the electrification was largely to eliminate the facilities for handling steam locomotives at the ends of the line. Practically all operation on the New Haven system west of New Haven, both freight and passenger, is now handled by electric locomotives and electric motor cars. The 11,000-volt, single-phase system which is used on the main line has been adopted.

Progress has been made on the Illinois Central electrification in Chicago, although it will not be in service for some months.

Foreign Electrifications Progressing

Many electrification plans are being pushed in Europe. The Austrian government has appropriated some $18,000,000 for electrifying the Tyrolean Railroad between Salzburg and Brudenz. In Germany work is nearing completion on the Munich-Garmisch line. Financial credits have been secured for the conversion of the Munich-Rosenheim-Kufstein line. A number of other projects are planned for this year.

Progress in Switzerland has been rapid since it was decided about a year ago to accelerate the electrification program so that practically all the main lines of the Swiss Federal Railways will be electrified within the next two years.

The Midi Railway in southern France is carrying to completion an extensive program of electrification. About 300 miles are now in service, making it by far the most pretentious French electric railroad system at present operating.

The Southern Railway of England began operation on 100 miles of track out of a total of 250 that are being electrified. This is a suburban system operating a number of lines radiating out of London.

The Japanese Government Railways has begun an extensive program of electrification in order to increase the capacity of its lines. The first step in this is the equipment of the Tokio-Kobe line as far as Kozu, a distance of 50 miles.

The Paulista Railway in Brazil is extending 25 miles from Tatu to Rio Clara. The Mexican Railway electrification is being extended 17 miles over the Maltrate incline. Various other projects have been inaugurated during the year in foreign countries.

Projects Under Contemplation

During the year the Pennsylvania Railroad announced that it will electrify its New York-Washington line. The first step in this will be the section from Philadelphia to Wilmington. The route is already electrified from Pennsylvania Station, New York, to Manhattan Transfer and from North Philadelphia to West Philadelphia. It will be necessary to standardize the contact system, as the former installation is at 600 volts direct current while the latter is at 11,000 volts, single-phase, alternating current.

Lines of the New York Central on the west side of Manhattan Island must be electrified at once, according to the latest court decision. Though this improvement is desirable, so much is involved in the way of grade separation that it will undoubtedly be some time before the work can be undertaken.

The status of electrification has been changed somewhat by the successful construction of oil-electric locomotives driven by Diesel engines. Several of these have been tried out during the year, and show great possibilities for handling traffic where there would not be sufficient density to justify installation of full electric equipment. This should simplify the electrification problem, particularly where there are many unimportant feeder lines to be considered.

Bus Operation by Electric Railways Broke All Records in 1925

More Companies Inaugurated Bus Service During the Past Twelvemonth than in Any Previous Year—The Number of Buses Operated More than Doubled—Purchases of New Passenger and Service Equipment Were Greater than Ever Before

PROGRESS made in bus operation by practically all the electric railways in the United States and Canada during the year just ended surpasses by a wide margin that of any previous twelve-month period. This is shown by statistics for 1925 compiled from information gathered from these companies by ELECTRIC RAILWAY JOURNAL. When statistics of bus operation by electric railways for 1924 were published in the Jan. 3, 1925, issue of this paper, showing that the number of companies furnishing such service had increased one-third during that year and that the number of buses owned had doubled, the rapidity of this development seemed remarkable. During 1925, however, the expansion was at an even greater rate. Railway companies operating buses increased in number from 156 to 280,

Proportion of Electric Railways Operating Buses to Total Number of Companies at the First of Each Year

Automotive Service Equipment Ordered by Railways During 1925

Name of Railway	No.	Type of Chassis	Body Builder
Connecticut			
Connecticut Co	6	1 Ton Truck	Ford
	1	1 Ton Truck	Dodge
	2	½ Ton Truck	Ford
	1	3½ Ton Truck	White
Maine			
York Utilities Co	1	Reo Speed Wagon Chassis	.....
Massachusetts			
Eastern Mass. St. Ry	3	1 Ton Truck	Ford
	1	1½ Ton Truck	Cadillac
Springfield St. Ry	1	2 Ton Truck	Federal
District of Columbia			
Washington Ry. & Elec. Co	8	Service Truck	.....
New Jersey			
Trenton & Mercer County Trac. Corp	3	1½ Ton Truck	Mack
New York			
Black River Trac. Co	1	Snow Plow	G. M. C.
Brooklyn City R.R.	1	5 Ton Trans. Wrecker	White-Hoover
	1	2 Ton Line Truck	Coml.
	3	2½ Ton Line Truck	White-Trenton
	3	3½ Ton Line Truck	White-Trenton
	2	2 Ton Track Truck	White-Hoover
	3	3½ Ton Track Truck	White-Hoover
New York State Rys	1	1 Ton Truck	Ford
	2	3½ Ton Truck	Brockway
	2	3½ Ton Truck	Brockway
	3	1½ Ton Truck	Brockway
Schenectady Ry	1	2½ Ton Truck	Mack
	1	5 Ton Universal Crane Mounted on Mack Chassis	.....
United Trac. Co	2	5½ Ton Snow Plow	Walter
	1	2 Ton Truck	Ford
Pennsylvania			
Buffalo & Erie Ry	2	6 Ton Truck	White
Philadelphia Rapid Transit Co	6	1 Ton Truck	Ford
	8	2½ Ton Truck	Mack
	1	Roadster	Ford
	1	1 Ton Truck	Ford
	1	5 Ton Truck	G. M. C.
	3	2½ Ton Truck	G. M. C.
	2	3½ Ton Trailer	P. R. T.
Pittsburgh Rys	4	5 Ton Tower Truck	Mack
	3	5 Ton Snow Plow	Walter
	1	5 Ton Universal Crane	Mack
West Penn Rys	1	3½ Ton Tower Truck	White
West Virginia			
Norfolk & Western Ry	1	5 Ton Truck	White
	1	3 Ton Truck	International
	1	2 Ton Truck	White
	1	Speedwagon	Reo
Illinois			
Aurora Plainfield & Joliet Ry	1	2 Ton Truck	Pierce Arrow
Chicago & Joliet Elec. Ry	1	Tractor	Fordson
Chicago North Shore & Milwaukee R.R.	2	5 Ton Tractor	White
	1	2½ Ton Truck	White
Chicago Rapid Transit Co	2	½ Ton Truck	Ford
	1	1 Ton Truck	Yellow Coach
Chicago Surface Lines	2	5 Ton Trucks	White-Press Sons
	1	3 Ton Truck	Auto Car-Voltz Bros.
	10	3 Ton Truck	Waite-C. S. L.
	1	2½ Ton Truck	Mack-Press Sons
East St. Louis Ry	1	1½ Ton Truck	Dodge-Graham
	1	Tower	.....
Illinois Traction, Inc	22	1 Ton Truck	Ford
Indiana			
Beech Grove Trac. Co	1	1 Ton Truck	Ford
Hammond, Whiting & East Chicago Ry	1	Tower Truck	White
Kentucky			
Louisville Ry	1	1 Ton Truck	Ford
	1	2 Ton Tower Truck	Dodge-Graham
Michigan			
Dept. of St. Rys., Detroit	28	Service Truck	.....
Milwaukee Elec. Ry. & Lt. Co	2	3 Ton Exp. Truck	Int. Harvester-(Stoughton)
	37	Truck	White-Sterling
Minnesota			
Duluth St. Ry. Co	1	2 Ton Tower Truck	White
	1	1½ Ton Dump Truck	White
	1	1 Ton Truck	Ford
Mesaba Ry. Co	1	Gas Tank Truck	White Chassis
	1	1½ Service Truck	Graham
Twin City Rapid Transit Co	3	1 Ton Trucks	Ford
Missouri			
United Rys. Co. of St. Louis	2	2½ Ton Truck	White-U.R. Co.
	1	1 Ton Truck	Ford
	1	½ Ton Truck	Ford
	1	5 Pass. Auto	.....
Ohio			
Cleveland Ry	3	¾ Ton Truck	White-Klein
Southern Ohio Public Service Co.	1	5 Ton Truck	White
Florida			
Jacksonville Trac. Co	1	1½ Ton Truck	Int. Harvester Co.
Georgia			
Athens Ry. & Elec. Co	1	1 Ton Truck	Ford
Columbus Elec. & Pwr. Co	1	1 Ton Truck	Ford
Georgia Ry. & Pwr. Co	18	3½ Ton Truck	.....
Tennessee			
Jackson Ry. & Lt. Co	2	Service Truck	.....
California			
Los Angeles Ry. Corp	10	Truck	.....
Municipal Ry., San Francisco	1	Truck	Reo
Kansas			
United Trac. System	2	2 Ton Truck	Reo
Texas			
Dallas Ry. Co	1	2 Ton Truck	White
Wichita Falls Trac. Co	1	Truck	Ford
	1	Truck	Dodge
Washington			
Grays Harbor Ry. & Lt. Co	3	5 Ton Dump Truck	.....
	1	5 Ton G. M. C.	.....
	2	White	.....
Seattle Munic. Ry	1	3½ Ton Truck	G. M. C.
	2	1 Ton Truck	Ford
Canada			
B. C. Elec. Ry. Co. Ltd	2	4 Ton Dirt Truck	Leyland-Co. Shop
	2	3 Ton Dirt Truck	Leyland-Co. Shop
	2	2½ Ton Truck	Federal-Co. Shop
	1	1 Ton Truck	Federal-Co. Shop
Niagara, St. Catherines & Toronto Ry	1	2½ Ton Truck	Leyland
Ottawa Elec. Rys. Co	1	2 Ton Truck	Federal
Quebec Ry. Lt. & Pwr. Co	1	Tower Truck (Rep.)	Local
Winnipeg Elec. Co	1	Gas-Elec. Snow Plow	Cummings
Total	284		

Bus Operation by Electric Railways and Subsidiary Companies

Connecticut

Connecticut Co	103
Danbury & Bethel St. Ry	4
Groton & Stonington St. Ry	3
Hartford & Springfield St. Ry	21
*Lordship Ry	4
New Haven & Shore Line Ry	10
Waterbury & Milldale Tramway	3

Maine

Central Maine Power Co	1
York Utilities Co	6

Massachusetts

Boston Elevated Ry	156
Boston & Worcester St. Ry	7
Eastern Massachusetts St. Ry	59
Fitchburg & Leominster St. Ry	3
Gardner-Templeton St. Ry	1
Holyoke St. Ry	3
Interstate St. Ry	6
Middlesex & Boston St. Ry	33
New Bedford & Onset St. Ry	5
Plymouth & Brockton St. Ry	1
Springfield St. Ry	25
Union St. Ry	10
Worcester Consolidated St. Ry	12

New Hampshire

*Laconia St. Ry	4
*Portsmouth Electric Ry	8
Nashua St. Ry	3

Rhode Island

Newport Electric Corporation	19
*Newport & Providence Ry	6
United Electric Rys	58

Vermont

*Twin State Gas & Electric Co	3

Delaware

Wilmington & Philadelphia Traction Co	45

District of Columbia

Capital Traction Co	26
Washington Ry. & Electric Co	44
Washington & Old Dominion Ry	1
Washington-Virginia Ry	11

Maryland

Cumberland & Westernport Electric Ry	3
Potomac Edison Co	50
United Rys. & Electric Co	81

New Jersey

Coast Cities Railway	25
Cumberland Traction Co	2
Millville Traction Co	7
Morris County Traction Co	4
New Jersey Inter-Urban Co	4
Ocean City Electric Railroad	1
Public Service Ry	809
Trenton & Mercer County Traction Corporation	27

New York

Auburn & Syracuse Electric R.R	4
Binghamton Ry	3
Black River Traction Co	15
Brooklyn-Manhattan Transit Corporation	10
Empire State Railroad	6
Geneva, Seneca Falls & Auburn R.R	3
International Ry	34
Jamestown St. Ry	12
*Newburgh Public Service Co	22
New York Rys	1
New York State Rys. (Rochester)	36
New York State Rys. (Syracuse)	15
New York State Rys. (Utica)	7
Niagara Gorge R.R	5
Olean, Bradford & Salamanca Ry	1
*Port Jervis Transit Co	2
Rochester & Syracuse R.R	1
Syracuse & Eastern R.R	1
Third Avenue Ry. System	8
United Traction Co. of Albany	28
*Walkill Transit Co	7

Pennsylvania

Altoona & Logan Valley Electric Ry	11
Beaver Valley Traction Co	8
Chambersburg & Shippensburg Ry	2
Citizens Traction Co	12
Conestoga Traction Co	2
Erie Rys	4
Johnstown & Somerset Ry	1
Johnstown Traction Co	9
Lackawanna & Wyoming Valley R.R	4
Lewiston & Reedsville Electric Ry	2
Lehigh Traction Co	10
Lehigh Valley Transit Co	5
Northumberland County Ry	2
Philadelphia & Westchester Traction Co	3
Philadelphia & Western Ry	2
Philadelphia Rapid Transit Co	219
Pittsburgh Harmony Butler & New Castle Ry Pittsburgh, Mars & Butler Ry	8
Pittsburgh Rys	22
Reading Transit & Light Co	3
Schuykill Ry	8
Scranton Ry	4
Westmoreland County Ry	5
Westside Electric St. Ry	2
Wilkes-Barre Ry	14
Williamsport Passenger Ry	3
York Rys	5
West Chester St. Ry	33

Virginia

Newport News & Hampton Ry. Gas & Elec. Co	5
Roanoke Ry. & Electric Co	5
Virginia Electric & Power Co	124

* Denotes company which operates buses only.

West Virginia

Charleston Interurban R.R	3
Monongahela West Penn Public Service Co	9
Ohio Valley Electric Ry	9
Princeton Power Co	1
Wheeling Public Service Co	4
Wheeling Traction Co	2

Illinois

Aurora, Elgin & Fox River Electric Co	3
Central Illinois Public Service Co	5
Chicago & Joliet Electric Ry	8
Chicago, North Shore, & Milwaukee R.R	46
Chicago & West Towns Ry	17
East St. Louis Ry	11
East St. Louis & Surburban Ry	6
Evanston Ry	5
Illinois Power Co	8
Illinois Power & Light Corp. (Bloomington)	6
Illinois Power & Light Corp. (Champaign)	9
Illinois Power & Light Corp. (Danville)	4
Illinois Power & Light Corp. (Decatur)	15
Illinois Power & Light Corp. (Galesburg)	7
Illinois Power & Light Corp. (Peoria)	9
Illinois Power & Light Corp. (Quincy)	8
Illinois Traction System (Valley Division)	4
Illinois Traction System (Main Line Division)	2
*Joliet, Plainfield & Aurora Transp. Co	5
Rockford City Traction Co	3
Rockford & Interurban Ry	6
Tri-City Ry. of Illinois	2

Indiana

Chicago, South Bend & Northern Indiana Ry	19
Gary Rys	68
Indianapolis & Cincinnati Traction Co	4
Indianapolis St. Ry	29
Indiana Service Co	5
Interstate Public Service Co	41
Northern Indiana Power Co	2
Southern Indiana Gas & Electric Co	6
Terre Haute, Indianapolis & Eastern Trac. Co	10
Union Traction Co	17

Iowa

Des Moines City Ry	3
Des Moines & Central Iowa R.R	3
Dubuque Electric Co	7
Fort Dodge Des Moines & Southern R. R	15
Iowa Southern Utilities Co. (Burlington)	4
Iowa Southern Utilities Co. (Centerville)	3
Mississippi Valley Electric Co	5
Tama & Toledo R.R	4
Waterloo, Cedar Falls & Northern Ry	9

Kentucky

Kentucky Traction & Terminal Co	7
Louisville Ry	17

Michigan

City of Detroit—Dept. of St. Rys	161
Detroit United Ry	180
Grand Rapids Ry	10
Michigan R.R	14
Michigan Electric Ry	32
Muskegon Traction & Lighting Co	2
Saginaw Transit Co	28

Minnesota

Duluth St. Ry	8
Mesaba Ry	9
Twin City Rapid Transit Co	91

Missouri

Kansas City, Clay County & St. Joseph Ry	16
Kansas City Ry	69
Missouri Power & Light Co	3
Springfield Traction Co	17
St. Louis Electric Terminal Ry	6
United Rys. of St. Louis	40
*West Missouri Power Co	2

Ohio

Cincinnati, Lawrenceburg & Aurora El. St. Ry	4
City of Ashtabula—Division of St. Rys	3
Cleveland Ry	101
Columbus, Urbana & Western Electric Ry	4
Community Traction Co	3
Dayton, Springfield, & Xenia Southern Ry	2
Indiana, Columbus & Eastern Traction Co	36
Northern Ohio Traction & Light Co	150
Ohio Service Co	5
Penn-Ohio Electric Co	44
Southern Ohio Public Service Co	46
Springfield Ry	1
*Stark Electric R.R	6
Steubenville, East Liverpool & Beaver Valley Traction Co	2
Youngstown & Ohio River R.R	4
Youngstown & Suburban Ry	17
Youngstown Municipal Ry	41

Wisconsin

Madison Rys	6
Milwaukee, Electric Ry. & Light Co	121
Wisconsin Gas & Electric Co	9
Wisconsin Power & Light Co	44
Wisconsin Public Service Corporation	3
Wisconsin Valley Electric Co	12

Alabama

Birmingham Electric Co	4
*Selma Electric Rys	3

Arkansas

Arkansas Central Power Co	9
Hot Springs St. Ry	2
Intercity Terminal Ry	6

Florida

Key West Electric Co	4
Tampa Electric Co	22

Georgia

Augusta-Aiken Ry. & Electric Corporation	1
Columbus Electric & Power Co	16
*Fairburn & Atlanta Ry. & Electric Co	4
Georgia Ry. & Power Co	15
Savannah Electric & Power Co	2

Louisiana

Baton Rouge Electric Co	3
New Orleans Public Service, Inc	19

Mississippi

*Meridian Light & Ry. Co	10
Mississippi Power & Light Co	1

North Carolina

Asheville Power & Light Co	2
Carolina Power & Light Co	3
Durham Public Service Co	11
Southern Public Utilities Co	2
Tidewater Power Co	3

South Carolina

South Carolina Gas & Electric Co	14

Tennessee

Nashville Interurban Ry	1
Tennessee Electric Power Co	5
Union Traction Co	1

Arizona

Tucson Rapid Transit Co	5

California

Bakersfield & Kern Electric Ry	5
Eureka St. Ry	1
Key System Transit Co	27
Los Angeles Ry	149
Market St. Ry	1
Municipal Ry. of San Francisco	13
Pacific Electric Ry	145
Pacific Gas & Electric Co	7
Peninsular Ry	7
San Diego Electric Ry	12
San Francisco-Sacramento R.R	1
San Jose R.Rs	1
Santa Barbara & Suburban Ry	5
Stockton Electric Ry	3
Union Traction Co	3

Colorado

Denver & Interurban R.R	4
Denver Tramway	3

Idaho

Boise Street Car Co	1

Kansas

Arkansas Valley Interurban Ry	3
Kansas Electric Power Co	6
Kansas City, Leavenworth & Western Ry	6
Topeka Ry	11
*Salina St. Ry	1
United Power & Light Corporation	2
Wichita R.R. & Light Co	13

Nebraska

Lincoln Traction Co	1
Omaha & Council Bluffs St. Ry	5

New Mexico

City Electric Co	1

Oklahoma

Northeast Oklahoma R.R	5
*Okmulgee Traction Co	3
Oklahoma Ry	7
Oklahoma Union Ry	26
Tulsa St. Ry	14

Oregon

Portland Electric Power Co	22
Southern Pacific System (Salem)	3

South Dakota

Sioux Falls Traction System	14

Texas

Abilene Traction Co	2
Eastern Texas Electric Co	2
Houston Electric Co	23
Marshall Traction Co	1
*Nueces Ry	2
Rio Grande Valley Traction Co	5
San Antonio Public Service Co	30
Texas Electric Ry	6
Wichita Falls Traction Co	2

Utah

Utah-Idaho Central R.R	2
Utah Light & Traction Co	1

Washington

Grays Harbor Ry. & Light Co	3
Lewiston-Clarkston Transit Co	1
Pacific Northwest Traction Co	28
Puget Sound Electric Ry	16
Puget Sound International Ry. & Power Co	35
Seattle Municipal Ry	24
Seattle & Rainier Valley Ry	2

Canada

British Columbia Electric Ry	20
Grand River Ry	3
Hydro-Electric Rys	8
London St. Ry	1
Montreal Tramways	26
Nova Scotia Tramways & Power Co	2
Ottawa Electric Ry	7
Quebec Ry., Light & Power Co	9
Toronto Transportation Commission	40
Windsor, Essex & Lake Shore Rapids Rys	2
Winnipeg Electric Ry	22

Panama

Panama Electric Co	2

Porto Rico

Ponce Electric Co	3

Hawaiian Islands

Honolulu Rapid Transit Co	6

a gain of 124, or approximately 80 per cent. Of this number about twenty small properties have entirely, or almost entirely, given up their rail service and operate only buses.

An increase occurred in the number of buses owned from 2,462 to 5,358, a gain of 2,896, or 117 per cent. Orders for new equipment placed in 1925 were more than twice those of the year before.

Looking back to the figures published in the statistical issues of this paper for 1924, it will be seen that the number of bus operating companies was 121, and the number of buses slightly more than 1,200. The next year the number of companies was 156, an increase of 29 per cent, and the number of buses was 2,462, an increase of 105 per cent. Figures for 1925 given in the preceding paragraph show a considerably larger increase, and thus break all records. The proportion of electric railways operating buses to the total number of companies is shown graphically in an accompanying chart.

While the figures show that approximately 35 per cent of the railways have undertaken bus operation, the actual number of automotive vehicles is small in comparison to the number of electric railway cars, there being only some 5,000 of the former as against 82,000 of the latter, or about 6 per cent. It is estimated that passengers carried annually by electric railway buses number approximately 800,000,000, while those carried by the rail lines are about 16,000,000,000.

Route mileage of bus lines compares favorably with that of the car lines. Bus routes total approximately 13,000 miles, as against 46,000 miles of electric railway single track. A considerable part of the railway mileage, however, is double track, so that the total mileage of rail route is less than the total single-track mileage. The difference between the ratio of the number of vehicles, which is 16 to 1, and the ratio of the number of miles of route, which is about 2½ to 1, is accounted for by the fact that buses are more often used on light traffic lines in outlying sections, where the service is infrequent, than on heavy urban lines, where the number of vehicles per mile of track is large. These comparisons are graphically shown in accompanying charts.

It is interesting to note that a large portion of the 13,000 miles of bus route represents new service given by the railways, compared to which the

Buses Ordered by Railways During 1925

Name of Company	Total	No. of Each Type	Type of Chassis	Body Builder	Seating Capacity
Connecticut					
Connecticut Company	35	2	Mack	Mack	29
		4	Mack	Kuhlman	29
		3	White	Kuhlman	29
		2	White	Hoover	29
		24	Yellow Coach	Yellow Coach	29
Hartford & Springfield St. Ry.	7	3	Mack	Mack	29
		2	Yellow Coach	Patterson	25
		2	Graham	Patterson	16
Waterbury & Milldale Tramway	3	1	White	Kuhlman	24
		1	White	Kuhlman	25
		1	White	Kuhlman	29
Maine					
Central Maine Power Co.	1	1	White	.....	25
York Utilities Co.	2	2	G. M. C.	Wisbach	21
Massachusetts					
Boston Elevated Railway	92	19	White	Brown	25
		11	White	Brown	29
		9	Mack	Mack	25
		22	Mack	Mack	29
		18	International	Niagara	25
		4	Yellow Coach	Yellow Coach	29
		1	Fageol	Fageol	29
		8	Miscellaneous	.....	....
Boston & Worcester St. Ry.	7	7	Mack	Mack	29
Eastern Mass. St. Ry.	16	5	Fageol	Fageol	31
		4	Fageol	Fageol	29
		6	Int. Harvester	Int. Harvester	29
		1	White	Brown	29
Gardner-Templeton St. Ry.	1	1	Dodge	Graham	20
Middlesex & Boston St. Ry.	21	21	White	Bender	29
New Bedford & Onset St. Ry.	1	1	Reo	Boston Body Co	21
Plymouth & Brockton St. Ry.	1	1	Reo	Boston Body Co	20
Springfield St. Ry.	16	1	Federal	Brown	25
		3	Garford	Wason	21
		1	Garford	Garford	25
		8	Yellow Coach	Yellow Coach	29
		3	Yellow Coach	Yellow Coach	21
Union Street Railway	7	2	Mack	Mack	21
		1	Pierce Arrow	Brown	18
		3	Pierce Arrow	Brown	26
		1	Pierce Arrow	Brown	29
Worcester Consolidated St. Ry.	12	2	White	Brown	25
		1	Pierce	Brown	29
		2	Mack	Mack	29
		4	Yellow Coach	Yellow Coach	29
		3	Yellow Coach	Yellow Coach	25
New Hampshire					
Laconia St. Ry.	4	4	Reo	Boston Body Co	21
Portsmouth Electric Ry.	8	8	White	Brown	29
Rhode Island					
Newport Electric Corp.	11	5	Fageol	Fageol Parlor Car	29
		2	Fageol	Fageol Delux St. Car	29
		4	Fageol	Fageol St. Car	29
Newport & Providence Ry.	6	....	.....	.....	....
United Electric Rys.	12	2	Yellow Coach	Yellow Coach	29
		1	White	Brown	29
		5	Reo	Fitzjohn	21
		4	Yellow Coach	Yellow Coach	29
District of Columbia					
Capital Traction Co.	15	8	Yellow Coach	Yellow Coach	21
		2	Yellow Coach	Yellow Coach	21
		3	Reo	Reo	16
		2	Reo	.....	21
Washington Ry. & Elec. Co.	24	7	Graham	Hoover	20
		7	Six Wheel Co	Am. M. B. Corp.	27
		6	Yellow Coach	Yellow Coach	27
		2	Yellow Coach	Yellow Coach	29
		2	Yellow Coach	Yellow Coach	21
Washington & Old Dominion Ry.	1	1	Graham	Graham	21
Washington-Virginia Ry.	9	9	Fageol	Fageol	29
Maryland					
Cumberland & Westernport Elec. Ry.	3	3	White	Hoover	21
United Ry. & Elec. Co.	9	6*	5th Ave	5th Ave.	55
		2	Yellow Coach	Yellow Coach	29
		1	Yellow Coach	Yellow Coach	23
New Jersey					
Morris County Traction Co.	3	2	G. M. C.	.....	14
		1	Reo	.....	30
Ocean City Elec. R.R.	1	1	Reo	Reo	15
Public Service Railway	483	333	Gas-electric	Yellow Coach	29
		68	White	.....	29
		44	Mack	.....	25
		3	Fageol	.....	29
		3	Yellow Coach	.....	29
		32	Miscellaneous	.....	....
Trenton & Mercer County Traction Co.	8	6	Fageol	Fageol	29
		2	Mack	Mack	29
New York					
Auburn Syracuse Elec. Ry.	4	4	Dodge	Graham	21
Black River Traction Co.	3	3	G. M. C.	Railway Shops	16
Empire State R.R.	6	6	Dodge	Graham	21
New York State Rys. (Rochester)	12	1	White	Bender	22
		1	White	Brown	29
		8	White	Bender	29
		1	Mack	Mack	25
		1	Studebaker	Autobody	21
New York State Rys. (Syracuse)	8	4	Brockway	Bender	25
		3	White	Bender	25
		1	Mack	Bender	25
New York State Rys. (Utica)	5	1	Mack	Bender	25
		1	Mack	Bender	25
		2	White	Bender	25
		1	Reo	Reo	21
Olean, Bradford & Salamanca Ry.	1	1	Clydesdale	Miller	16
Rochester & Syracuse R.R.	1	1	Larabee	Whitfield	14
Syracuse & Eastern R.R.	1	1	Reo	Patterson	25
United Traction Co.	21	18	Fageol	Fageol	29
		3	Mack	Mack	25

mileage of rail route entirely replaced by bus lines is small. During 1925 extensions to bus routes operated by electric railways totaled about 3,500 miles. Of this less than one-tenth represented replacement of car service. City bus routes gained about 900 miles. New intercity routes totaled some 2,400 miles, while touring and sightseeing lines added another 140 miles. On the other hand, operation of about 12 miles of city bus route was abandoned by the railways and nearly 150 miles of interurban route.

Details of the developments during the year have been published in this paper from time to time and can only be summarized briefly here. Electric railways which added more than 200 buses during the year are the Public Service Railway, Newark, N. J., and the Philadelphia Rapid Transit Company. How the development of coordinated transportation in New Jersey has resulted in the former company becoming the largest bus operator in the United States was told in the issue of this paper for Nov. 28. Gas-electric bus operation inaugurated during the early part of the year by the Philadelphia Rapid Transit Company has been discussed widely and is being observed with interest by the industry.

One of the largest increases in 1925 in the number of buses owned by an electric railway occurred in Michigan, where the Detroit United Railways acquired 180 such vehicles. For the purpose of carrying its interurban passengers downtown from transfer stations on the outskirts of the city, this railway bought 40 single-deck Yellow coaches. An article on this subject was published in ELECTRIC RAILWAY JOURNAL for May 2, 1925. Purchase of competing independent bus lines was largely responsible for the remainder of the 180 buses acquired by the D. U. R.

In Norfolk, the Virginia Electric & Power Company, formerly the Virginia Railway & Power Company, purchased 102 competing buses and 22 new vehicles, making a total of 124. The Cleveland Railway has ordered more than 100 new buses. At present not all of these have been delivered and the full service has not been established. Ninety-two buses were added to the fleet operated by the Boston Elevated Railway. The Northern Ohio Traction & Light Company has greatly extended its bus service in the Akron and Canton districts, practically doubling the number of such vehicles in service. One of the pio-

Buses Ordered by Railways During 1925—(Continued)

Name of Company	Total	No. of Each Type	Type of Chassis	Body Builder	Seating Capacity
Pennsylvania					
Beaver Valley Traction Co.	2	1	Pierce Arrow	Thompson	25
		1	Mack	Mack	25
Chambersburg & Shippensburg Ry.	2	2	Garford	Garford	17
Citizens Traction Co.	4	4	Fageol	Fageol	29
Erie Railways	4	4	Yellow Coach	Yellow Coach	29
Lehigh Traction Co.	10	10	Mack	Mack	25
Lehigh Valley Transit Co.	5	5	Mack	Mack	25
Pittsburgh, Harmony, Butler & New Castle Ry.	3	1	Reo	Reo	21
		2	Reo	Reo	17
Schuylkill Ry.	4	4	Reo	Paterson	18
Scranton Ry.	2	2	Dodge	Graham	20
Westmoreland County Ry.	3	1	Fageol	.....	29
		1	Garford	.....	23
		1	Dodge	.....	15
Westside Electric St. Ry.	2	2	Mack	Mack	25
Virginia					
Roanoke Ry. & Elec. Co.	3	3	Dodge	Graham	17
Virginia Elec. & Power Co.	22	7	Reo	Reo	21
		5	White	Bender	23
		10	Mack	Amco	27
West Virginia					
Charleston Interurban R.R.	3	3	Menominee	Thompson	25
Ohio Valley Elec. Ry.	7	3	Graham	.....	17
		4	Graham	.....	21
Monongahela-West Penn Pub. Serv. Co.	2	1	Fageol	Fageol	22
		1	Yellow Coach	Yellow Coach	21
Wheeling Traction Co.	2	2	Fageol	.....	29
Illinois					
Aurora Elgin & Fox River Elec. Co.	3	2	White	Schaefer	25
		1	Fageol	Fageol	30
Central Illinois Pub. Serv. Co.	5	2	Dodge	Graham	17
		3	Reo	Reo	21
Chicago & Joliet Elec. Ry.	6	4	Mack	Mack	21 to 25
		2	Graham	Graham	21 to 25
Chicago, No. Shore & Milwaukee R.R.	6	2	Fageol	Fageol	22
		3	Studebaker	Studebaker	18
		1	Pierce Arrow	Bender	16
Chicago & West Towns Ry.	10	10	Reo	Cunningham	21
East St. Louis Ry.	6	3	Mack	St. Louis Car	29
		1	Mack	Mack	29
		1	Yellow Coach	St. Louis Car	29
		1	Yellow Coach	Yellow Coach	29
Illinois Power Co.	3	3	.....	.....	29
Illinois Pwr. & Lt. Corp. (Bloomington)	6	6	Mack	Mack	25
Illinois Pwr. & Lt. Corp (Champaign)	9	3	Yellow Coach	Yellow Coach	29
		6	White	White	25
Illinois Pwr. & Lt. Corp. (Danville)	4	4	Yellow Coach	Yellow Coach	29
Illinois Pwr. & Lt. Corp. (Galesburg)	7	5	Yellow Coach	Yellow Coach	29
		2	Yellow Coach	Yellow Coach	21
Illinois Pwr. & Lt. Corp. (Peoria)	9	8	Yellow Coach	Yellow Coach	29
		1	International	.....	29
Illinois Pwr. & Lt. Corp. (Quincy)	8	8	White	.....	25
Illinois Traction System (Main Line)	2	2	Yellow Coach	Yellow Coach	21
Illinois Traction System (Valley Div.)	1	1	International	.....	25
Joliet Plainfield & Aurora Transp. Co.	1	1	Pierce Arrow	.....	30
Rockford City Traction Co.	3	3	Yellow Coach	Yellow Coach	29
Indiana					
Chicago South Bend & Northern Indiana Ry.	6	6	Reo	Fitzjohn	21
Gary Rys.	45	13	Yellow Coach	Yellow Coach	29
		9	Yellow Coach	Yellow Coach	21
		13	Int. Harvester	Lang	24
		2	Int. Harvester	Lang	21
		8	Int. Harvester	Int. Harvester	12
Indianapolis & Cincinnati Traction Co.	4	4	Fageol	Fageol	31
Indianapolis St. Ry.	24	24	Yellow Coach	Yellow Coach	29
Indiana Service Corp.	5	5	Int. Harvester	Int. Harvester	20
Interstate Pub. Serv. Co.	8	2	Studebaker	.....	19
		4	Fageol	.....	22
		2	Reo	.....	20
Northern Indiana Power Co.	2	2	Int. Harvester	Int. Harvester	12
Southern Indiana Gas & Elec. Co.	6	6	Dodge	Graham	21
Terre Haute, Indianapolis & Eastern	10	5	Yellow Coach	Yellow Coach	29
		5	Reo	Reo	21
Union Traction Co.	10	5	Reo	Fitzjohn	21
		5	White	Kuhlman	25
Iowa					
Dubuque Electric Co.	4	4	Mack	Mack	25
Iowa Southern Utilities Co. (Burlington)	4	4	Mack	Mack	25
Iowa Southern Utilities Co. (Centerville)	3	3	Graham	Graham	21
Waterloo, Cedar Falls & Northern Ry.	2	2	Mack	Mack	29
Kentucky					
Kentucky Traction & Terminal Co.	5	5	White	Kuhlman	25
Louisville Ry.	5	4	Yellow Coach	.....	29
		1	White	Bender	25
Michigan					
City of Detroit, Dept. of St. Rys.	135	123	Dodge	Graham	21
		12	Reo	Reo	29
Detroit United Ry.	40	40	Yellow Coach	Yellow Coach	29
Grand Rapids Ry.	2	2	Yellow Coach	Yellow Coach	21
Michigan R.R.	14	14	Fageol	Fageol	26
Michigan Elec. Ry.	12	12	Fageol	Fageol	26
Minnesota					
Duluth St. Ry.	4	2	White	Eckland	...
		2	Mack	Eckland	...
Mesaba Ry.	9	3	Mack	Eckland	20
		3	White	Eckland	20
		3	Fageol	.....	29
Twin City Rapid Transit Co.	8	7	Mack	Eckland	...
		1	Mack	Lang	...
Missouri					
Kansas City, Clay County and St. Joseph Ry.	5	1	Yellow Coach	Yellow Coach	29
		3	Yellow Coach	Yellow Coach	18
		1	Studebaker	.....	18
Kansas City Rys.	67	2	Mack	Mack	29
		11	Mack	American	29
		19	Yellow Coach	American	29
		6	Yellow Coach	American	29
		5	Six Wheel	St. Louis Car Co.	31
		18*	Six Wheel	St. Louis Car Co.	63
		6	Dodge Graham	Dodge Graham	21

Buses Ordered by Railways During 1925—(Continued)

Name of Company	Total	No. of Each Type	Type of Chassis	Body Builder	Seating Capacity
Missouri—continued					
Missouri Power & Light Co	3	3	Mack	Mack	25
Springfield Traction Co	5	3	Yellow Coach	.....	....
		2	Dodge	Graham	....
St. Louis Elec. Terminal Ry	6	6	Yellow Coach	Yellow Coach	29
United Rys. of St. Louis	36	5	Six Wheel	St. Louis Car	29
		24	White	St. Louis Car	29
		2	White	U. R. C.	25
		4	White	Anheuser-Busch	29
		1	Mack	St. Louis Car	29
Ohio					
Cleveland Ry	101	30	White	Kuhlman	29
		30*	Six Wheel	Six Wheel	62
		1	Six Wheel	Six Wheel	29
		10*	Six Wheel	Six Wheel	62
		30	White	Kuhlman	29
Columbus, Urbana & Western Ry	2	2	Reo	.....	21
Indiana, Columbus & Eastern Trac. Co.	1	1	Fageol	Fageol	22
Penn-Ohio Elec. Co	5	5	White	Bender	25
Southern Ohio Public Service Co	26	5	Ace	Ace	25
		2	Fageol	Fageol	28
		3	Studebaker	Studebaker	18
		4	Fageol	Fageol	22
		12	Studebaker	Studebaker	11
Youngstown & Suburban Ry	3	3	Fageol	Fageol	22
Youngstown Municipal Ry	2	2	White	Bender	25
Stark Elec. R.R.	6	6	Yellow Coach	Yellow Coach	21
Wisconsin					
Madison Railways	6	6	Yellow Coach	Yellow Coach	29
Milwaukee Elec. Ry. & Light Co	19	5	Fageol	Fageol	31
		3	Yellow Coach	Yellow Coach	31
		2	Fageol	Fageol	23
		9	Yellow Coach	Yellow Coach	29
Wisconsin Power & Light Co	21	4	Fageol	Fageol	25
		3	Hudson	Hudson	7
		2	Yellow Coach	Yellow Coach	27
		5	Yellow Coach	Yellow Coach	30
Wisconsin Public Service Co	3	2	Reo	.....	21
		1	Yellow Coach	.....	23
Wisconsin Valley Elec. Co	8	2	Yellow Coach	Yellow Coach	29
		2	Yellow Coach	Yellow Coach	21
		2	Reo	McKinnon	13
		2	G. M. C.	McKinnon	18
Arkansas					
Arkansas Central Power Co	3	1	Yellow Coach	Yellow Coach	21
		1	Mack	Mack	21
		1	White	White	25
Hot Springs St. Ry	2	2	Reo	.....	....
Florida					
Key West Elec. Co	4	4	Mack	Amer. Car Co.	29
Tampa Elec. Co	22	16	Mack	Birney	29
		6	Reo	Reo	21
Georgia					
Columbus Elec. & Power Co	13	8	Mack	Amer. Car Co.	29
		5	White	Amer. Car Co.	29
Georgia Ry. & Power Co	15	15*	Fageol	Fageol	60
Savannah Elec. & Power Co	2	1	Dodge	Graham	21
		1	Mack	Mack	29
Louisiana					
Baton Rouge Elec. Co	3	3	Mack	Birney	29
New Orleans Pub. Serv. Inc	14	1	Graham	Graham	21
		4	Yellow Coach	Yellow Coach	29
		6	Mack	Mack	29
		3	Fageol	Amer. Car Co.	29
Mississippi					
Mississippi Power & Light Co	1	1	Yellow Coach	Yellow Coach	21
Mississippi Power Co	10	8	Fageol	Fageol	21
		2	Reo	St. John	19
North Carolina					
Asheville Power & Light Co	2	2	White	.....	16
Carolina Power & Light Co	1	1	White	Bender	21
Durham Public Service Co	11	8	Reo	Fitzjohn	21
		3	Mack	Kuhlman	25
Southern Public Utilities Co	1	1	White	White	21
Tennessee					
Tennessee Elec. Power Co	5	5	Fageol	Fageol	29
Arizona					
Tuscon Rapid Transit Co	5	2	Dodge	Graham	21
		2	Garford	Garford	21
		1	Reo	Locally Built	18
California					
Key System Transit Co	13	4	Dodge	Graham	16
		1	Dodge	Graham	21
		1	Pierce Arrow.	.....	29
		4	Pierce Arrow	.....	25
		1	Pierce Arrow	.....	29
		2	Yellow Coach	Yellow Coach	29
Los Angeles Ry	40	20	.....	.....	....
		20*	.....	.....	....
Market St. Ry	1	1	Fageol	Fageol	29
Municipal Ry. of San Francisco	4	1	White	White	25
		3	Pierce Arrow	Cal. Motor Coach	29
Pacific Elec. Ry	5	3*	Fageol	.....	58
		2*	Moreland	Moreland	59
Pacific Gas & Elec. Co	3	3	Moreland	Moreland	16
Peninsular Ry	4	4	Fageol	Fageol	29
San Diego Elec. Ry	2	2	Dodge	Graham	...
Colorado					
Denver & Interurban R.R.	4	4	Yellow Coach	Yellow Coach	30
Denver Tramway	3	1	Fageol	Fageol	21
		1	Graham	Graham	21
		1	Studebaker	Auto Body Co	21
Idaho					
Boise St. Car Co	2	2	Pierce Arrow	Brown	29
Kansas					
Arkansas Valley Interurban Ry	3	3	White	.....	14
Kansas City, Leavenworth & Western Ry	6	5	Mack	Mack	25
		1	Graham	Graham	20
Topeka Ry	11	11	Mack	Mack	25

neer companies to engage in bus operation, the United Railways & Electric Company of Baltimore, in April purchased the East Fayette Street bus line in that city and added 37 more buses to the 44 which were in service at the beginning of the year.

Increase in the number of comparatively small electric railways operating buses has been relatively greater than in the number of large companies. This is because many of the larger railways were listed as operators last year. Among the newcomers of the former class are Gardner-Templeton Street Railway; Laconia Street Railway; Cumberland & Westernport Electric Railway; Black River Traction Company; Chambersburg & Shippensburg Railway; Lehigh Traction Company; Rio Grande Valley Traction Company; Wichita Falls Traction Company; Lewiston & Clarkston Transit Company; and in Canada, the Grand River Railway and the Windsor, Essex & Lake Shore Rapid Railways.

In general, the development during the past year has been greater among the urban street railways than among the interurbans. Among the new city companies now operating buses are those in Cleveland, Denver, Duluth, Erie, Indianapolis, Omaha, Pittsburgh, Portland, Wilkes-Barre and Worcester.

New bus operations by interurban electric railways have not been lacking, however. Following is a list of some of the companies which have undertaken such service: New Haven & Shore Line Railway; Boston & Worcester Street Railway; Washington & Old Dominion Railway; Auburn & Syracuse Electric Railroad; Rochester & Syracuse Railroad; Syracuse & Eastern Railroad; Lackawanna & Wyoming Valley Railroad; Charleston Interurban Railroad; Aurora, Elgin & Fox River Electric Company; Indianapolis & Cincinnati Traction Company; Terre Haute, Indianapolis & Eastern Traction Company; Denver & Interurban Railroad; Kansas City, Leavenworth & Western Railway.

Considering geographically the development of bus operation by electric railways during the past year, the largest proportionate increase is found to have been in the Southern states. Bus service has been undertaken in Atlanta, Ga.; Baton Rouge, La.; Chattanooga, Tenn.; Durham, N. C.; Hot Springs, Ark.; Key West, Fla.; Lynchburg, Va.; Roanoke, Va.; Savannah, Ga.; Tampa, Fla. Substantial increases in number of electric railways operating buses occurred also in other sections of the country, but development there was rela-

Buses Ordered by Railways During 1925—(Concluded)

Name of Company	Total	No. of Each Type	Type of Chassis	Body Builder	Seating Capacity
Nebraska					
Omaha & Council Bluffs St. Ry	5	5	White	Weir	25
Oklahoma					
Northeast Oklahoma R.R.	3	3	Dodge	Graham	21
Oklahoma Ry.	7	4	Dodge-Graham	Graham	21
		3	Reo	Reo	21
Oklahoma Union Ry.	27	17	Mack	Mack	25
		1	Reo	Reo	15
		1	Reo	Reo	16
		2	Reo	Reo	20
		3	Reo	Reo	21
		3	Dodge	Graham	21
Oregon					
Portland Elec. Power Co.	22	3	Fageol	.....	29
		3	Yellow Coach	.....	29
		3	Fageol	.....	29
		2	Yellow Coach	.....	29
		6	Yellow Coach	.....	21
		2	Fageol	Gas-Elec	29
		3	Yellow Coach	Gas-Elec.	29
South Dakota					
Sioux Falls Traction System	6	1	Dodge	.....	17
		4	White	Eckland	25
		1	Hudson	.....	7
Texas					
Abilene Traction Co.	1	1	Reo	Fitzjohn	21
North Texas Traction Co.	4	2	Reo	Reo	21
		2	Yellow Coach	Yellow Coach	21
Rio Grande Valley Traction Co.	5	5	Reo	Reo	21
San Antonio Public Service Co.	14	....	.....	.....	....
Hudson Elec. Co.	2	1	Yellow Coach	Yellow Coach	29
		1	Yellow Coach	Yellow Coach	21
Texas Electric Ry.	6	3	Dodge	Graham	21
		1	Reo	Reo	16
		2	Studebaker	Studebaker	13
Wichita Falls Traction Co.	2	2	Reo	.....	21
Utah					
Utah-Idaho Central R.R.	2	2	Fageol	Fageol	19*
Washington					
Grays Harbor Ry. & Lt. Co.	3	3	White	Local	29
Lewiston-Clarkston Transit Co.	1	1	Studebaker	Auto Body Co.	...
Puget Sound Elec. Ry.	4	1	Yellow Coach	Yellow Coach	25
		3	Yellow Coach	Yellow Coach	17
Puget Sound Int. Ry. & Powr. Co.	4	3	Fageol	Newell	26
		1	Studebaker	Auto Body Co.	21
Seattle Municipal Street Ry.	10	5	Garford	Local	29
		5	Studebaker	.....	21
Canada					
British Columbia Elec. Ry.	9	6	Leyland	Local	29
		1	White	Local	29
		2	White	Local	29
Grand River Ry.	3	3	Fageol	Fageol	29
Hydro Elec. Rys.	4	4	Gotfredson	Commercial	21
Montreal Tramways	24	8	Yellow Coach	.....	29
		10	White	Brown	25
		4	Six-Wheel	.....	29
		2	Reo	Reo	21
Ottawa Elec. Ry.	2	2	Reo	Ottawa Car Mfg. Co.	21
Toronto Transportaton Comm.	36	3	White	T. T. C.	29
		15	Yellow Coach	T. T. C.	29
		6	Yellow Coach	T. T. C.	29
		3	Republic	.....	30
		2	Ruggles	.....	30
		6	Courier	.....	30
		1	Courier	.....	25
Windsor, Essex Lake Shore Rapid Rys.	2	2	Gotfredson	Gotfredson	18
Winnipeg Elec. Co.	10	7	Reo	Railway Shop	21
		3	Dodge-Graham	Railway Shop	16
Porto Rico					
Ponce Elec. Co.	3	3	Reo	Fitzjohn	21
Total	2,171				

*Denotes Double-Deck

tively less pronounced. The number of companies in each geographical division as reported in the statistical issues of ELECTRIC RAILWAY JOURNAL for 1924 and 1925 are given in the accompanying table, as well as the figures for Jan. 1, 1926.

New buses ordered during 1925 numbered 2171 as compared with 963 ordered in 1924. Buses acquired with the purchase of independent companies and retained in service by electric railways account for the difference between the total increase of nearly 2,900 and the amount of the orders. On the other hand, the net increase is affected by the considerable number of buses which were scrapped during the year.

Among the large purchases during 1925 were 123 Graham Brothers 21-passenger buses for the Department of Street Railways, city of Detroit. The Cleveland Railway, Kansas City Railways, Los Angeles Railway, Gary Railways, and the Boston Elevated were companies which placed large orders during the year.

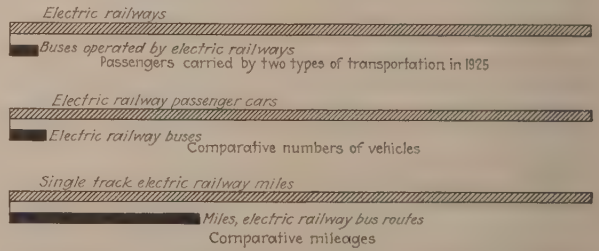
In the latter part of December the Public Service Railway placed an order for 333 gas-electric buses with the Yellow Coach Manufacturing Company. Electrical equipment is to be supplied by the General Electric Company. While the exact purchase price was not announced it is said to be approximately $3,000,000. This is the largest single order for buses that has ever been placed by any electric railway in the United States or Canada.

Other automotive equipment ordered by electric railways also shows a large increase over previous years. Reports received show 284 motor trucks purchased in 1925 as compared with 105 in 1924, 148 in 1923, and 112 in 1922. The 1-ton type was the most popular size, with the 3½-ton type second. Others ranged in size from ½ ton to 7 tons. None of the companies reported the purchase of any trackless trolleys.

Purchases of new equipment for the year show a slightly different trend from those of previous years. A number of companies have acquired double-deck vehicles, among them being the railways in Atlanta, Baltimore, Cleveland, Kansas City and Los Angeles. The actual number of double-deck buses shown in the table of purchases for the year, approximately 100, is less than for the preceding year, when 191 were ordered. This is explained by the fact that the order of the Philadelphia Rapid Transit Company for 125 such vehicles was included in the sta-

Geographical Classification of Electric Railways Operating Buses

	Jan. 1, 1924	Jan. 1, 1925	Jan. 1, 1926
New England States	14	19	29
Eastern States	31	43	74
Central States	39	48	83
Southern States	5	9	25
Western States	26	28	55
Canada	5	9	11
Panama	1	..	1
Porto Rico	..	..	1
Hawaiian Islands	..	..	1
Total	121	156	280


Electric railways
Buses operated by electric railways
Passengers carried by two types of transportation in 1925
Electric railway passenger cars
Electric railway buses
Comparative numbers of vehicles
Single track electric railway miles
Miles, electric railway bus routes
Comparative mileages

Comparison of Transportation Services Furnished by Electric Railway Companies in the United States and Canada as of Jan. 1, 1926

Passengers carried by rail are estimated to be 16,000,000,000 and by electric railway buses approximately 800,000,000. Electric railway passenger cars number about 82,000 while some 5,300 buses are operated by these companies. Single-track electric railway mileage is 46,000 and bus routes total some 13,000 miles.

Bus Route Extensions During 1925

Name of Railway	Name of Operating Co.	City Miles	Intercity Miles	Touring Miles	Sightseeing Miles	Replaced Miles
Connecticut						
Connecticut Co.		10.04	79.28	.....	.....	38.72
Hartford & Springfield St. Ry.		.....	9.70	.....	.....	9.70
Waterbury & Milldale Tramway		.....	0.75	.....	.....	.....
Maine						
Central Maine Power Co.		.....	12.00	.....	.....	4.50
York Utilities Co.		8.50	34.50	.....	.....	4.50
Massachusetts						
Boston Elevated Ry.		25.50	.....	.....	.....	32.00
Boston & Worcester St. Ry.		6.00	.....	.....	.....	6.00
Eastern Massachusetts St. Ry.		13.10	38.40	.....	.....	8.80
Gardner-Templeton St. Ry.		.....	5.00	.....	.....	.....
Middlesex & Boston St. Ry.		2.00	.....	.....	.....	.....
Springfield St. Ry.		5.70	.....	.....	.....	1.32
Union St. Ry. of New Bedford		.....	34.00	.....	.....	.....
Worcester Consolidated St. Ry.		3.00	68.00	.....	.....	10.10
New Hampshire						
Portsmouth Electric Ry.	Boston & Maine Transp. Co.	18.00	.....	.....	.....	18.00
Rhode Island						
Newport Electric Corp.		6.90	40.00	.....	.....	20.00
United Electric Rys.		.....	18.88	.....	.....	10.10
Vermont						
Bellows Falls & Saxton River St. R.R.	Pierce Bus Co.	2.00	4.00	.....	.....	.....
District of Columbia						
Capital Traction Co.		11.03	.....	.....	.....	.....
Washington & Old Dominion Ry.		.....	16.80	.....	.....	.....
Washington Ry. & Electric Co.		18.65	.....	.....	.....	2.63
Washington Ry. & Electric Co.	City & Surburban Ry. of Washington	2.65	14.90	.....	.....	5.62
Washington-Virginia Ry.		.....	23.00	.....	.....	.....
Maryland						
Cumberland & Westernport Electric Ry.		.....	22.10	.....	.....	16.60
United Rys. & Electric Co.	Baltimore Transit Co.	4.57	.....	54.00	.....	.....
United Rys. & Electric Co.	East Fayette St. Bus Co.	23.45	.....	.....	5.50	.....
New Jersey						
Morris County Traction Co.		.....	3.00	.....	.....	.....
Trenton & Mercer County Traction Corp.	Central Transportation Co.	42.70	.....	.....	.....	.....
New York						
Auburn & Syracuse Electric R.R.	Mid-State Coach Lines, Inc.	4.80	.....	.....	.....	1.90
Black River Traction Co.	Watertown Transportation Co.	1.24	.....	.....	.....	.....
Empire State R.R.	Mid-State Coach Lines, Inc.	7.00	.....	.....	.....	.....
International Ry.	International Bus Corp.	20.70	8.09	.....	.....	4.42
New York State Rys.		7.50	221.00	.....	.....	.....
Olean, Bradford & Salamanca Ry.	O. B. & S. Bus Line	.....	9.00	.....	20.00*	9.00
Rochester & Syracuse R.R.	Mid-State Coach Lines, Inc.	.....	13.50	.....	.....	.....
United Traction Co., Albany	Capitol District Transp. Co.	9.52	.....	.....	.....	1.24
Pennsylvania						
Buffalo & Erie Ry.	Buffalo & Erie Coach Corp.	0.50	3.00	.....	.....	.....
Chambersburg & Shippensburg Ry.	Cumberland Valley Transit Co.	2.00	9.00	.....	.....	9.00
Citizens Traction Co.	Citizens Transit Co.	4.00	22.00	.....	.....	9.00†
Erie Rys.	Erie Coach Co.	3.00	.....	.....	.....	.....
Lehigh Traction Co.	Hazelton Auto Bus Co.	1.40	4.50	.....	.....	.....
Lehigh Valley Transit Co.	Lehigh Valley Transportation Co.	8.09	.....	.....	.....	.....
Monongahela-West Penn Public Service Co.		.....	32.80	.....	.....	.....
Schuylkill Ry.	Schuylkill Transportation Co.	.....	10.00	.....	.....	.....
Scranton Ry.		0.50	2.00	.....	.....	.....
Shamokin & Edgewood Electric Ry.	Shamokin & Trevorton Bus Line	1.00	8.00	.....	.....	.....
Stroudsburg Traction Co.	E. Stroudsburg Bus Co.	8.50	.....	.....	.....	.....
Westmoreland County Ry.		.....	5.00	.....	.....	.....
Virginia						
Roanoke Ry. & Electric Co.	Roanoke Rapid Transit Co.	2.60	8.50	.....	.....	.....
Virginia Electric & Power Co.	Richmond Rapid Transit Co.	9.00	.....	.....	.....	.....
Virginia Electric & Power Co.		17.00	.....	.....	.....	.....
West Virginia						
Charleston Interurban R.R.		2.50	.....	.....	.....	.....
Monongahela West Penn Public Service Co.		.....	32.80	.....	.....	.....
Illinois						
Aurora, Elgin & Fox River Electric Co.		.....	12.48	.....	.....	8.91
Central Illinois Public Service Co.		9.00	.....	.....	.....	7.41
Chicago & Joliet Electric Ry.		6.00	.....	.....	.....	.....
Chicago North Shore & Milwaukee R.R.		.....	123.50	.....	*	.....
Chicago & West Towns Ry.		4.50	.....	.....	.....	.....
East St. Louis Ry.		3.40	3.60	.....	.....	2.00
Illinois Power Co.		2.08	.....	.....	.....	.....
Illinois Power & Light Corp.		0.75	.....	.....	.....	0.75
Rockford City Traction Co.		3.30	.....	.....	.....	.....
Rockford & Interurban Ry.		.....	33.50	.....	.....	.....
Indiana						
Indianapolis & Cincinnati Traction Co.		.....	28.00	.....	.....	.....
Indianapolis Street Ry.		56.88	.....	.....	.....	.....
Interstate Public Service Co.		.....	103.00	.....	.....	.....
Terre Haute, Indianapolis & Eastern Trac. Co.		10.40	.....	.....	.....	.....
Gary Rys.		34.00	250.00	.....	.....	.....
Union Traction Co.		.....	127.60	.....	.....	.....
Iowa						
Dubuque Electric Co.		5.30	.....	.....	.....	.....
Iowa Southern Utilities Co., Burlington		7.00	.....	.....	.....	2.50
Kentucky						
Kentucky Traction & Terminal Co.	Kentucky Coach Co.	10.00	.....	.....	.....	.....
Louisville Ry.	Kentucky Carriers	4.90	.....	.....	.....	.....
Michigan						
Department of St. Rys., Detroit		79.97	.....	.....	.....	.....
Grand Rapids Ry.		1.42	.....	.....	.....	.....
Michigan Electric Ry.	Southern Michigan Transportation Co.	.....	105.50	.....	.....	.....
Detroit United Rys.		25.40	10.40	.....	.....	14.60

* Summer operation only. † Titusville Traction Co.

Bus Route Extensions During 1925—(Concluded)

Name of Railway	Name of Operating Co.	City Miles	Intercity Miles	Touring Miles	Sightseeing Miles	Replaced Miles
Minnesota						
Duluth St. Ry.	Duluth Coach Co	2.00	8.15	.....	.....	.....
Twin City Rapid Transit Co.	Twin City Motor Bus Co.	.....	52.30	.....	.....	.....
Missouri						
Kansas City Clay County & St. Joseph Ry		.....	60.00	.....	.....	.....
Kansas City Rys.		43.98	.....	.....	.....	.....
Missouri Power & Light Co.		3.00	.....	.....	.....	.....
St. Louis Terminal Ry.		8.75	.....	.....	.....	.....
United Rys. of St. Louis	St. Louis Bus Co.	17.45	.....	.....	1.50	.....
United Rys. of St. Louis	Missouri Electric R.R.	.....	12.90	.....	.....	.....
Ohio						
Cleveland Railway		40.14	.....	.....	.....	1.76
Community Traction Co.		0.51	.....	.....	.....	0.51
Indiana, Columbus & Eastern Traction Co.	Dayton & Columbus Transportation Co.	.....	24.00	.....	.....	.....
Stark Electric R.R.		10.00	.....	.....	.....	3.00
Wisconsin						
Madison Rys.		10.00	.....	.....	.....	.....
Milwaukee Electric Ry. & Light Co.		5.82	103.00	.....	.....	1.28
Wisconsin Power & Light Co.		2.00	283.50	25.00	.....	2.00
Wisconsin Valley Electric Co.		1.70	.....	.....	.....	.....
Florida						
Key West Electric Co.		2.30	.....	.....	.....	1.90
Tampa Electric Co.		6.00	.....	.....	.....	.....
Georgia						
Columbus Electric & Power Co.	Columbus Transp. Co.	12.41	.....	.....	.....	5.92
Georgia Ry. & Power Co.	Atlanta Coach Co.	19.20	.....	.....	.....	.....
Georgia Ry. & Power Co.	Georgia Ry. & Light Co.	3.81	.....	.....	.....	.....
Savannah Electric & Power Co.		1.25	.....	.....	.....	0.41
Louisiana						
Baton Rouge Electric Co.		2.60	.....	.....	.....	.....
New Orleans Public Service, Inc.		5.91	.....	.....	.....	1.12
North Carolina						
Asheville Power & Light Co.		2.00	.....	.....	.....	.....
Carolina Power & Light Co.		1.50	.....	.....	.....	.....
Durham Public Service Co.		8.50	.....	.....	.....	4.10
Tennessee						
Tennessee Electric Power Co.		5.50	.....	.....	.....	.....
Arizona						
Tuscon Rapid Transit Co.		5.15	.....	.....	.....	.....
California						
Los Angeles Ry.		18.70	.....	.....	.....	.....
Municipal Ry. of San Francisco		1.30	.....	.....	.....	.....
Peninsular Ry.		3.87	.....	.....	.....	3.87
San Diego Electric Ry.		4.50	.....	.....	.....	.....
Pacific Gas & Electric Co.		3.93	.....	.....	.....	.....
Market St. Ry.		0.82	.....	.....	.....	1.38
Kansas						
Arkansas Valley Interurban Ry.		8.00	68.50	.....	.....	.....
Kansas, Leavenworth & Western Ry.	Leavenworth Transportation Co.	5.36	.....	.....	.....	5.36
Topeka Ry.		8.80	.....	.....	.....	.....
Nebraska						
Omaha & Council Bluffs St. Ry.		8.50	.....	.....	.....	.....
Oklahoma						
Northeast Oklahoma R.R.		.....	11.00	.....	.....	.....
Oklahoma Ry.		7.00	.....	.....	.....	.....
Texas						
Abilene Traction Co.		4.00	.....	.....	.....	.....
Wichita Falls Traction Co.		3.00	.....	.....	.....	.....
Washington						
Grays Harbor Ry. & Light Co.	Twin City Transit Co.	1.80	.....	.....	.....	.....
Lewiston & Clarkston Transit Co.		8.00	.....	.....	.....	.....
Pacific Northwest Traction Co.		.....	102.00	.....	.....	.....
Portland Electric Power Co.		6.64	.....	.....	.....	.....
Seattle Municipal Street Ry.		10.60	.....	.....	.....	1.10
Canada						
British Columbia Electric Ry.		2.20	12.00	.....	.....	.....
Grand River Ry.		2.50	2.00	.....	.....	4.50
Montreal Tramways		10.85	8.80	.....	.....	.....
Toronto Transportation Commission		6.24	.....	.....	34.00	.....
Windsor, Essex & Lake Shore Rapid Ry.	Highway Motor Coach Lines	6.38	30.23	.....	.....	.....
Porto Rico						
Ponce Electric Co.		3.00	.....	.....	.....	.....
Totals		936.41	2,399.46	79.00	61.00	297.53

tistics for 1924, although the vehicles did not actually go into service until the present year.

Gas-electric buses have appeared for the first time this year in a number of localities. Besides those of the Philadelphia Rapid Transit Company and the recent order by the Public Service Railway, gas-electrics have been purchased by the Georgia Railway & Power Company, the Kansas City Railways and the United Traction Company of Albany, N. Y. A feature of certain of the buses bought by the Kansas City Railways is an automatic rear exit. This is the first time that such a device has been tried and thus far the Kansas City company is the only operator to include this feature.

The parlor car type of bus appears to be growing in popularity as compared with the so-called street car type, although the number of the latter type purchased during the past year remains somewhat larger than the number of the de luxe type. An interesting example of the way these may be used by an electric railway is the operation of the Chevy Chase bus line of the Capital Traction Company, Washington, D. C. Under this plan commodious buses are operated from the Chevy Chase residential district downtown to the shopping section of the city. An extra fare is charged on account of the superior quality of the transportation service which is provided.

Electric Railway Costs and Fares Continue Stable in 1925

Only a Few Points Variation Has Occurred in Major Index Figures During the Year—Discussion of Trends Indicates Stability for Coming Year—Several Changes in Method of Computing Figures

By Albert S. Richey
Electric Railway Engineer, Worcester, Mass.

ON THE following page there is a chart showing graphically the course during the past twelve years of five index numbers which may be of interest to electric railway owners and operators. The indexes included are of (1) wholesale commodities, (2) electric railway construction costs, (3) electric railway operating material costs, (4) electric railway wages, and (5) street railway fares. Accompanying the graphic presentation is a tabulation showing the average indexes for each year, 1913 through 1920 inclusive, and the monthly indexes from January, 1920, to and including the latest available data. Each index is shown on the base of 1913 = 100. The five indexes here shown are among the twelve which make up the Conspectus of Indexes which is compiled monthly by the writer and published regularly in the Financial and Corporate section of the ELECTRIC RAILWAY JOURNAL—usually in the fourth issue of each month. Similar charts and tables have been published in the Annual Statistical Numbers—the first issue of the JOURNAL in January in 1923, 1924 and 1925. At this time the new Electric Railway Construction Cost Index of the American Electric Railway Association is included, replacing the general Construction Cost Index of the *Engineering News-Record* which has appeared in the charts previously published.

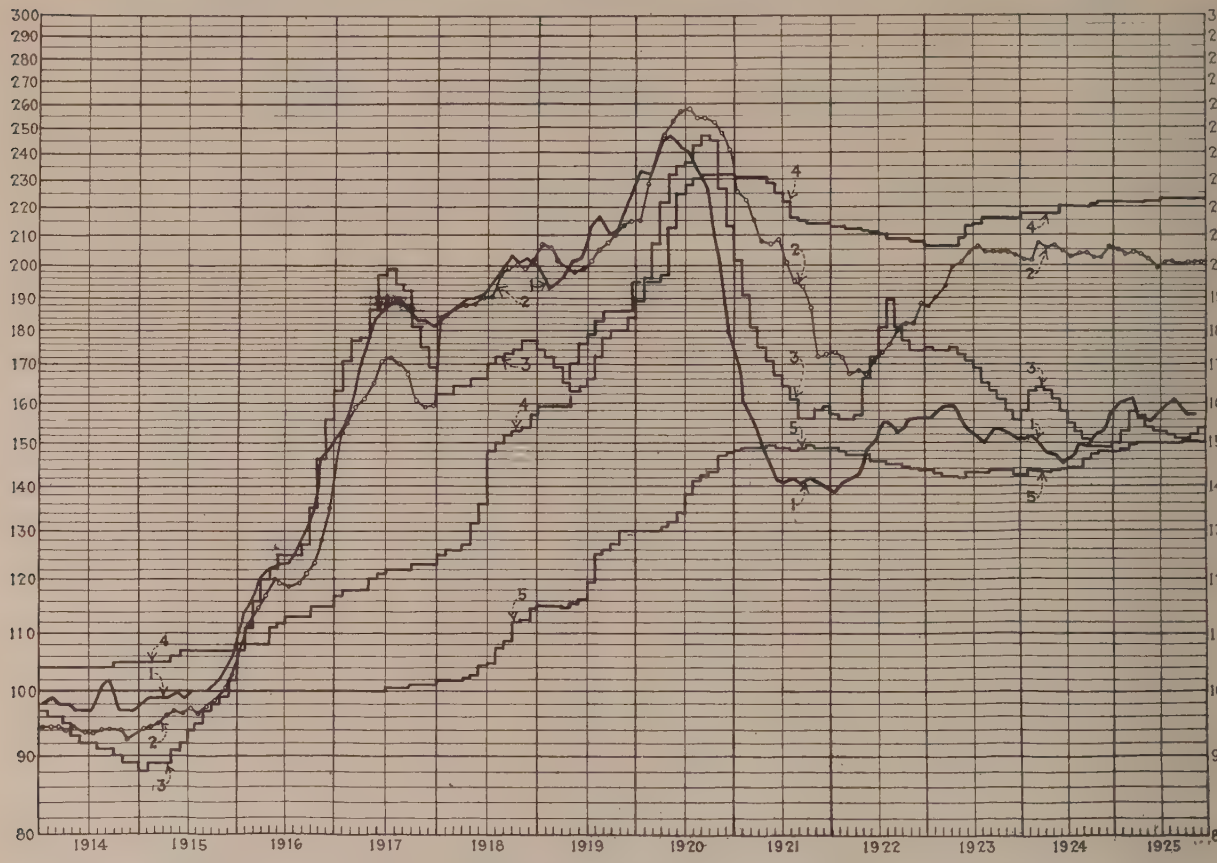
COMPUTATION OF THE INDEXES

The various indexes and the methods used in their computation will be given here, inasmuch as it has been two years since this résumé has included such a statement, and as additional data are now included. The Wholesale Commodity Index of the United States Bureau of Labor Statistics represents the course of the weighted average price of more than 400 commodities, as computed monthly by the bureau. This index is perhaps the most authoritative, the most widely used, and most often quoted of any which purposes to show the trend of the general price level. The various commodities on which prices are collected and used in the computation of this index include groups such as farm products, foods, cloths and clothing, fuel and lighting, metals and metal products, building materials, chemicals and drugs, house furnishing goods, and miscellaneous items. Separate indexes are published by the bureau covering these constituent groups as well as the all-commodity index which represents the combination of all groups and which is the one here quoted. The latest bulletin of the Bureau on Wholesale Prices is No. 390, issued in July, 1925, and covering the period 1890 to 1924. This bulletin contains a description of the weightings and the methods used in computing these indexes, together with data as to actual and relative prices of the various commodities and relative prices of the groups of commodities which enter into the index. The index numbers as shown in that bulletin cover the entire period beginning with 1890, in which year the all-commodities index stood at 80.5. Its low point was 66.7 for the year 1896, after which year it gradually increased, reaching a value of 100.9 in 1910. Its course since 1913 is shown by the data included herewith.

The Electric Railway Construction Cost Index of the American Electric Railway Association was proposed by the valuation committee of that association at the Atlantic City convention last October. The report of that committee, quoted on page 584 of the Oct. 10, 1925, issue of the JOURNAL, contains a description of the data and method used in their compilation. It is still in a tentative form and subject to change as data are received from members of the association comparing actual valuation figures with the index as proposed. It may be assumed, however, that it is a fairly good index of the construction cost of the average electric railway, excluding land values, and it may be used to determine at least approximately what figure might be arrived at by a valuation of an electric railway property on the basis of present prices, if a valuation of the same property has been made at some previous time, using prices then current. The index here shown for the year 1916 is not as printed in the report of the valuation committee last October, as it has been corrected here to correspond with changes which are just now being made by the *Engineering News-Record* in its indexes of common labor and general construction costs, these being constituent elements of the Electric Railway Construction Cost Index. The change thus made necessary in this index for the year 1916 brings it more closely in line with available data on electric railway valuations.

The Electric Railway Operating Materials Cost Index is not one of construction costs but applies to the materials used in electric railway maintenance and operation. The weighting of the cost of such materials differs, of course, from that used in a construction cost index, and there is a further material difference in that this index does not include any labor costs which make up so large a part of the first cost of railway construction. The index, however, does include fuel cost, at a weighting of 40 per cent of the total. While many railways purchase power, most power contracts include a so-called coal clause which varies the price of power with the cost of coal, and it is for this reason that the cost of fuel for power is included in the index,

Trend of Construction Costs, Wages and Fares, 1913-1926, as Collected by Albert S. Richey



1. Wholesale prices all commodities (U. S. Bureau of Labor Statistics).

2. Electric railway construction costs (American Electric Railway Association statistics).

3. Electric railway operating materials costs (Richey). Includes fuel for power and weighted according to average use in maintenance and operation.

4. Electric railway wages (Richey). Maximum hourly wages of platform men, weighted according to number of men.

5. Street railway fares (Richey). U. S. cities (except New York) weighted according to population.

	Wholesale Prices, All Commodities (U. S. Bur. Lab. Stat.)	Elec. Ry. Construction Costs (Am. Elec. Ry. Assn.)	Elec. Ry. Operating Materials Costs (Richey)	Elec. Railway Wages (Richey)	Street Railway Fares (Richey)
1913 average	100.0	100.0	100.0	100.0	100.0
1914 average	98.1	94.0	92.6	104.2	100.0
1915 average	100.8	97.3	93.5	106.2	100.1
1916 average	126.8	119.8	126.2	111.6	100.1
1917 average	177.2	162.7	181.9	120.6	100.5
1918 average	194.3	192.5	168.8	140.5	106.2
1919 average	206.4	205.1	172.2	174.0	120.7
1920 average	226.2	244.7	224.6	217.3	137.2
1920					
January	233.2	214.4	189.3	195.0	129.9
February	232.4	227.7	196.2	195.0	129.9
March	234.4	234.1	207.3	195.0	130.2
April	244.6	246.1	221.1	197.0	131.1
May	246.7	252.9	231.7	213.0	131.9
June	243.3	256.1	235.6	226.0	134.0
July	240.7	256.4	237.3	228.0	138.0
August	231.4	254.0	242.7	231.0	141.5
September	226.2	254.2	247.5	232.0	142.6
October	211.3	252.0	245.2	232.0	143.3
November	196.4	247.6	227.4	232.0	147.0
December	179.2	240.6	213.4	232.0	147.5
1921					
January	169.8	224.9	201.6	231.5	148.2
February	160.1	223.4	190.8	231.4	148.6
March	155.4	215.9	180.8	231.4	148.9
April	147.9	208.0	174.7	231.3	149.1
May	145.5	207.3	171.0	228.2	149.6
June	141.6	208.0	166.6	224.6	148.9
July	141.0	200.8	163.6	221.3	149.0
August	141.5	195.3	160.4	215.5	148.7
September	141.5	193.6	156.1	215.1	148.9
October	141.6	186.6	156.3	214.3	149.6
November	140.7	172.4	158.0	214.2	148.9
December	139.8	172.6	159.1	214.0	148.6
1922					
January	138.3	172.6	157.0	212.6	148.6
February	141.4	171.9	156.4	212.6	147.8
March	142.2	167.7	155.8	211.9	147.4
April	142.6	168.6	157.0	211.9	147.4
May	147.6	167.4	166.0	211.5	147.4
June	149.6	171.0	172.0	210.8	145.5
July	154.9	173.8	180.8	210.2	145.5
August	155.0	176.0	188.9	208.3	144.9
September	153.3	180.5	181.0	207.8	144.8
October	154.1	182.4	176.9	207.8	144.6
November	155.5	182.6	174.4	207.5	144.1
December	156.2	187.4	174.1	207.7	143.7
1923					
January	155.8	187.3	175.2	207.1	143.4
February	156.7	190.6	173.9	207.1	143.4
March	158.6	194.8	174.2	206.8	142.4
April	158.7	199.0	175.3	207.0	142.3
May	156.2	201.0	173.1	209.0	142.1
June	153.5	204.1	171.3	212.6	142.9
July	150.6	205.3	169.1	213.5	142.9
August	150.1	204.3	165.5	216.2	142.9
September	153.7	204.0	163.2	216.4	143.4
October	153.1	204.3	160.9	216.4	143.5
November	152.1	204.4	158.3	216.4	143.5
December	151.0	203.3	155.5	216.4	142.4
1924					
January	151.2	203.0	158.5	217.4	142.6
February	151.7	203.8	163.2	217.4	143.1
March	149.9	206.8	163.9	217.5	143.1
April	148.4	205.5	162.8	217.7	143.2
May	146.9	206.7	160.8	217.8	143.5
June	144.6	204.8	157.6	220.0	143.8
July	147.0	203.7	154.9	220.0	144.2
August	149.7	204.3	152.6	220.0	144.3
September	148.8	204.3	151.4	220.1	146.2
October	151.9	203.2	148.5	220.6	149.1
November	152.7	203.7	148.6	220.7	149.5
December	157.0	205.6	148.7	220.8	149.6
1925					
January	160.0	205.3	150.3	221.0	149.6
February	160.6	203.9	153.1	221.0	149.6
March	161.0	204.4	158.4	221.5	149.9
April	156.2	204.1	157.3	221.6	150.0
May	155.2	202.0	153.9	222.2	150.0
June	157.4	200.0	152.4	222.4	150.0
July	159.9	200.1	152.6	222.5	150.2
August	160.4	201.0	151.6	222.6	150.3
September	159.7	200.5	150.9	222.7	150.6
October	157.6	202.7	150.9	222.8	151.0
November	157.7	202.4	152.0	222.8	150.7
December	.....	202.2	153.9	223.0	150.7

which may therefore be taken as an index of the cost of operating materials including power cost, when the latter is purchased under a coal clause. The remaining 60 per cent of the weighting of the materials index is made up of the costs of metals and metal products, lumber and building materials. The weighting of these individual items was determined upon after a careful study of the cost of materials used by a number of railway companies in various parts of the country over a period of years.

The Index of Electric Railway Wages as here shown is as computed monthly by the writer. The data used are the maximum wage rates of conductors and motormen on two-man cars on 144 companies in the United States, employing a total of 108,175 platform men. These rates are weighted on the basis of the number of platform men employed by the various companies; the index therefore indicates the trend of the average platform man's hourly rate of wage. Previous to October, 1924, this index was weighted according to the number of passenger cars operated by the various companies. As noted on page 787 of the JOURNAL for Nov. 1, 1924, the weighting then was changed to the number of platform men, as above described, and the index was recalculated for the years 1923 and 1924. Up until October of this year, 103 companies were included, but at that time, additional companies were added, bringing the total number up to 144, so that the index now includes all companies in the United States which employ more than one hundred platform men each. The addition of 41 companies, all of which were small in the number of men employed, made practically no change in the index numbers as published for the preceding three years, and consequently no revision has been made in the index numbers as previously published on account of the additional data used.

The Index of Street Railway Fares, as here shown, is as computed by the writer, and includes all cities in the country with a population of 50,000 or more, except New York City. The index is weighted in accordance with the population of the various cities, and the fares used are, as nearly as it is possible to determine them, the average in the various cities, including cash and regular ticket or token fares. Ticket or token rates used are those available to all riders at all times of the day; pupils', workmen's or other special forms of tickets are not included. Pass and free transfer riders are not included in arriving at the averages, but where a charge is made for a transfer such charge and the proportion of original riders paying it are considered. The multiplying factor between the Richey Fare Index as here presented (on the base of 1913 = 100) and the average fare in cents is 0.048425. The average fare in cents may be found for any month by multiplying the index number as here shown by that factor, which represents the average fare in 1913.

TRENDS SHOWN BY THE INDEXES FOR 1925

In the articles corresponding to this which were printed in the Statistical Issues of the JOURNAL for 1924 and 1925, attention was called to the apparent stabilization of electric railway costs, as compared with the large and rapid fluctuations in labor and material costs which characterized the years during and immediately following the world war. This tendency is again borne out by the figures for 1925.

The Wholesale Commodity Index averages several points higher than in 1924, its fluctuations during the year just passed having been between 155 and 161, while during the preceding year its average was 150.

The Electric Railway Construction Cost Index is still following the almost horizontal course started in the middle of 1923, although for the past seven months it has been 1 or 2 per cent lower than during the preceding two years. This is due primarily to a slight falling off in average rates paid for common labor, as there has been very little change in its other constituents.

The Index of Operating Materials Costs, which with some minor fluctuations followed a general downward trend from the middle of 1922 to the end of 1924, showed an increase during the first half of 1925, followed by a decline during the last half of the year, and an increase in December, so that at present it is 3½ per cent higher than a year ago.

The Index of Electric Railway Wages shows an increase during the year of 1 per cent, this being due principally to increases in Cleveland, Detroit, Philadelphia, Seattle, Minneapolis and St. Paul, and the Eastern Massachusetts Street Railway. With very few and minor exceptions, no other increases have been reported during the year, but there have been many renewals and extensions of existing rates. No decreases have been reported during the year. Wage increases have been granted, effective as of Jan. 1, 1926, in Buffalo and in Oakland; the effect of these changes will be to increase the index about 0.7 point or 0.3 per cent.

The Index of Street Railway Fares has increased slightly during the year. The weighted average fare was 7.24 cents at the beginning of the year. This rose to the peak in October, principally due to increases in Buffalo, Minneapolis, St. Paul, Omaha, South Bend, and the eastern Massachusetts cities. Since October, it has been slightly reduced by the reduction in fares in Cincinnati. The October index of 151.0, corresponding to an average fare of 7.31 cents, is the highest point which this index has reached. The previous peak was in October, 1921, when the index stood at 149.6, corresponding to an average fare of 7.24 cents. The increase in fares in Rochester, as of Jan. 1, 1926, will almost, if not quite, bring the index back to its peak of October, 1924.

Among other indexes regularly included in the monthly Conspectus but not charted or tabulated here, the General Construction Cost Index to the *Engineering News-Record* stands at 205.95 in December, a reduction of 2.63 points or 1¼ per cent since December, 1924; the average for the year 1925 is 206.68, which is 8.67 points or 4 per cent under the average for 1924. Bradstreet's Index of Wholesale Commodities, which stood at 9.2115 as an average for 1913, is 14.4054 on Dec. 1, 1925; this is an increase of 0.8765 point or 6¼ per cent since December, 1924; the average for 1925 is 13.9445, which is an increase of 1.0773 points or 8¼ per cent over the average for 1924. The United States Bureau of Labor Statistics Index of Retail Food Costs is 167.1 for November, 1925, an increase of 17 points or 11 per cent over the index for November, 1924. The Cost of Living Index of the National Industrial Conference Board is 171 for November, 1925, an increase of six points or 3½ per cent since November, 1924.

Of the indexes relating to general business conditions, the unfilled steel orders of the United States Steel Corporation were slightly in excess of 400,000 and 500,000 tons on Nov. 30, last, as compared with about 4,000,000 tons a year before; throughout 1925 the

monthly reports of unfilled steel orders have exceeded the corresponding months of 1924 by amounts averaging 333,000 tons, or about 8½ per cent. The monthly reports of bank clearings outside of New York City also have consistently shown increases over 1924 throughout the year, while at least since March, the number of business failures as well as the liabilities have been less than during the same period in 1924. These indexes, as well as others relating to the state of general business, indicate slightly better conditions and more activity during 1925 than in 1924.

Trend of Operating Costs

In the résumé corresponding to this, which was printed in the Statistical Number of the JOURNAL a year ago, two of the Richey Indexes (operating material costs and wages) were combined to arrive at an indication of the trend of electric railway operating expenses. This was done under the assumption that a fair present distribution of operating expense is wages 62½ per cent, material 22½ per cent, and other expense 15 per cent. The "other" expense is that part of the operating expense which is neither wages nor material, such as salaries, general office expense, advertising, accidents, etc., and it was assumed that such "other" expense varies in the same ratio as wages and material combined. This combination also involves the assumption that all wages paid by the electric railways have varied the same as the wages of the platform men. With all of these assumptions, the 1925 change in average electric railway operating costs (exclusive of fixed charges) was as follows:

	Wages	Materials	Operating Expense
Index at end of 1924.....	220.8	148.7	201.7
Index at end of 1925.....	223.0	153.9	204.7
Increase during 1925, per cent	1.0	3.5	1.5

On this basis, then, which does not take into account such economies as those made possible by the one-man car, average electric railway operating expenses (not including fixed charges) in the United States at the end of 1924 were a little more than double those of 1913; during 1925 they increased 3 points, or 1½ per cent; and it may be noted that during the same periods the average street railway fares increased 50.7 per cent since 1913, and 0.74 per cent during 1925.

It should be borne very definitely in mind, in considering any of the figures shown or statements made in this article, that they are based on average conditions of the country as a whole, and that in specific locations or cities individual experience is quite likely to show different results. These country-wide trends, however, are of great value for comparison with individual experience.

Annual Table of Statistics of the Industry

IN ADDITION to the statistics contained in this issue, ELECTRIC RAILWAY JOURNAL publishes annually a table of general statistics of the electric railway industry, based on the McGraw Electric Railway Directory. This directory is published annually in February, and statistics from the February, 1925, directory were published in the issue of this paper for March 7, 1925.

The editors of this paper are now compiling the statistics for this annual table from the reports being received for the February, 1926, McGraw directory and hope to publish the results in tabular form in some issue of this paper during January. This table will show, as usual, by states, the number of operating electric railway companies, miles of track and number of passenger motor cars, passenger trail cars, electric locomotives, freight motor cars, freight trail cars, service cars and other types of cars owned by the electric railways in the United States.

Damages to Electric Railways by Earthquakes

ELECTRIC railway cars destroyed by the earthquake of Sept. 1, 1923, in Japan, totaled 955, according to a paper presented at the International Conference of Large Transmission Systems, held in Paris in June of this year. Practically all of these cars were destroyed by the fire following the earthquake. The actual damage done by the quake itself to the electric railways was mostly to the track and roadbed. Sinking of the roadbed occurred over a wide area. Movement of the roadbed naturally caused a corresponding movement of the poles, with some damage to the feeders and trolley lines. There was also considerable damage to bridges and culverts, but tunnels did not suffer much damage. That suffered was mainly at the entrances.

Within the built-up city areas, such as in Tokyo and Yokohama, fire followed the earthquake, causing the losses of cars already mentioned. The chief sufferer was the municipality of Tokyo, which lost altogether 534 double-truck cars and 290 single-truck cars.

By Sept. 1, 1924, more than a year after the disaster, the miles of track and number of electric cars in operation had returned to the status of before the earthquake.

Building a Bridge in a Day

WHEN the city of North Milwaukee decided to build a new bridge on 32d Street near Hampton Road it became necessary for the Milwaukee Electric Railway & Light Company to devise some way to keep the cars in operation over the creek while the new bridge was under construction. After considering several kinds of operation it was decided to construct a temporary bridge over the old bridge, allowing sufficient space in between the two structures so as not to interfere with the construction of the new bridge. During the night of Saturday, Sept. 12, sufficient material was delivered with which to construct this bridge, consisting mainly of piles, rails, 12-in. x 12-in. caps and ties.

On the morning of Monday, Sept. 14, actual work was started on the temporary bridge. Commencing at 8 o'clock the cars were stubbed on either side of the bridge, the trolley wire was shifted to one side and the pile driver was set up for the purpose of driving piles for the bents of the temporary structure, after which the old track, deck and old bridge were removed. By noon the piles for the three bents needed had been driven. The temporary track was supported on a deck, using eight 62-ft. 7-in. 102 T-rail, four being placed parallel and under each running rail of the bridge. About all that remained to be done was to place run-offs at each end of the bridge. These were made by using ties and timber, making an easy incline at each side. Temporary cross-over points were used to connect the temporary track with the permanent track. By 5:30 p.m. the trolley wire had been replaced and cars were operating over the new temporary bridge. —*Rail and Wire.*

Receiverships Reduced in 1925

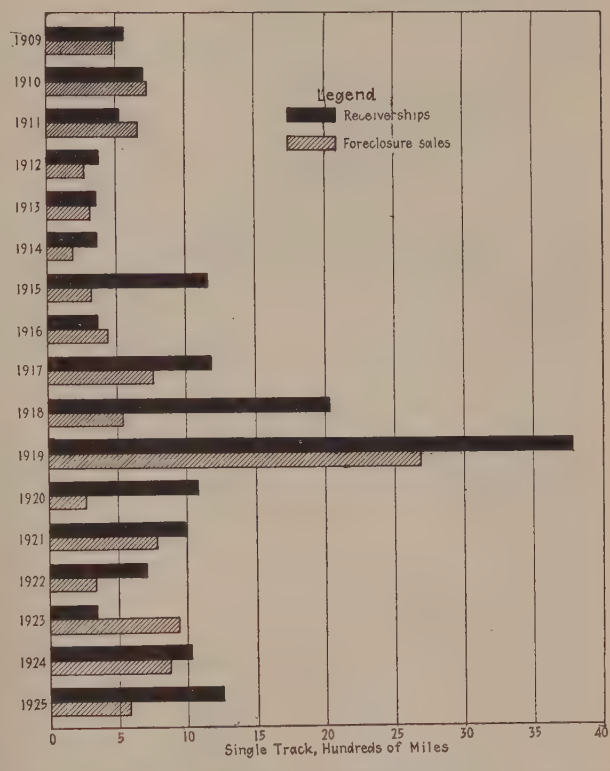
Fewer Roads Were Thrown in Receivership During the Year, Although the Failure of One Large Property Increased the Mileage Over That in 1924—Many Roads Restored to Their Owners, While Others Are on the Way to Terminate Receiverships Early This Year

WITH the number of electric railways in receivership gradually decreasing and reorganizations and merging of properties not in receivership the favorable outlook for the industry increases. There has been much activity along these lines during the past year, along with the trend toward co-ordination and strengthening the existing roads. While the number of miles of track involved is now about 4,165, slightly more than last year, there are fewer companies involved. Four companies comprising some 68 miles of track have gone through foreclosure proceedings and are now in the process of reorganization, but the final steps have not been perfected. These are therefore included in the table as still being in receivership.

The most important reorganization the past year was that of the Denver Tramway with 226 miles of single track, which becomes the Denver Tramway Corporation.

Another important reorganization was that of the Chicago, Lake Shore and South Bend Railroad, a 71-mile interurban. A receiver for this road was appointed on Feb. 28, the foreclosure sale took place June 29, and by July 13 it had been reorganized as the Chicago, South Shore & South Bend Railroad and the receiver discharged.

The Cleveland, Alliance & Mahoning Valley Railway was sold at receiver's sale to the Northern Realty Company, a subsidiary of the Northern Ohio Traction & Light Company, and is now operating as an important link in the freight handling of the latter company.



The Mileage of Electric Railways Going into Receiverships and Those Sold at Foreclosure Is Presented Graphically

Table I—Electric Railway Receiverships—1925

	Miles of Single Track Involved	Outstanding Securities		
		Stock	Bonds	Receivers' Certificates
Boston & Worcester Street Ry., Framingham, Mass.	83.00	$2,482,200	$2,520,000	None
Laconia Street Ry., Laconia, N. H.	8.00	140,000	91,000	None
Cumberland & Westenport Electric Ry., Frostburg, Md.	25.00	625,000	655,000	None
Binghamton Railway, Binghamton, N. Y.	49.52	978,895	2,812,825	None
Frankford, Tacony & Holmesburg Street Ry., Philadelphia, Pa.	16.18	500,000	400,000	None
Chicago, Lake Shore & South Bend Ry., Michigan City, Ind. (1)	70.86	6,000,000	4,692,000	None
Indianapolis & Cincinnati Traction Co., Indianapolis, Ind.	101.00	3,600,000	2,400,000	$112,000
Detroit United Ry., Detroit, Mich.	613.89	25,000,000	29,745,500	None
Wahpeton Breckenridge Street Ry., Breckenridge, Minn.	1.00	42,500	None	None
Tiffin & Fostoria Ry., Tiffin, Ohio	15.00	(2)	(2)	(2)
Helena Light & Railway Co., Helena, Mont.	18.50	935,000	878,000	None
Salt Lake & Utah Railroad, Salt Lake City, Utah	96.71	5,043,700	2,644,200	100,000
Oklahoma Railway, Oklahoma City, Okla. (3)	138.40	5,595,900	5,815,000	None
Tulsa Street Railway, Tulsa, Okla.	23.00	580,000	771,000	None
Total for 1925 (14 companies)	1,260.06	$51,523,195	$54,484,525	$212,000

(1) Receiver appointed Feb. 28, 1925. Property sold at foreclosure sale and reorganized as Chicago, South Shore & South Bend Railway. Receiver discharged July 13.
(2) Information not available
(3) Receiver appointed late in December, 1924.

Table II—Record of Electric Railway Receiverships

Year	Number of Companies	Miles of Single Track Involved	Outstanding Securities—Stock	Outstanding Securities—Bonds
1909	22	558.00	$29,962,200	$22,325,000
1910	11	696.61	12,629,400	75,490,735
1911	19	518.90	29,533,450	38,973,293
1912	26	373.58	20,410,700	11,133,800
1913	18	342.84	31,006,900	47,272,200
1914	10	362.39	35,562,550	19,050,460
1915	27	1,152.10	40,298,050	39,372,375
1916	15	359.26	14,476,600	10,849,200
1917	21	1,177.32	33,918,725	33,778,400
1918	29	2,017.61	92,130,388	163,257,102
1919	48	3,781.12	321,259,354	312,915,104
1920	19	1,065.31	28,758,455	72,283,575
1921	19	986.42	32,909,525	36,177,800
1922	14	695.43	18,140,150	20,304,400
1923	12	333.63	8,332,100	14,707,066
1924	12	1,021.88	28,489,700	35,716,000
1925	14	1,260.07	51,383,195	54,696,525

(3) Receiver appointed late in December, 1924.

Table III—Record of Electric Railway Foreclosure Sales

Year	Number of Companies	Miles of Track Involved	Outstanding Securities—Stocks	Outstanding Securities—Bonds	Outstanding Securities—Receivers' Certificates
1909	21	488.00	$22,265,700	$21,174,000	(a)
1910	22	724.36	19,106,613	26,374,075	(a)
1911	25	660.72	91,354,800	115,092,750	(a)
1912	18	267.18	14,197,300	10,685,250	(a)
1913	17	302.28	15,243,700	19,094,500	(a)
1914	11	181.26	26,239,700	44,094,241	(a)
1915	19	308.31	30,508,817	16,759,997	(a)
1916	19	430.14	13,895,400	22,702,300	(a)
1917	26	745.19	27,281,900	27,313,045	(a)
1918	23	524.22	37,740,325	20,149,384	(a)
1919	29	2,675.48	89,893,400	79,836,738	$42,300
1920	13	259.90	7,782,400	11,227,328	52,000
1921	13	777.97	33,642,255	30,863,526	5,000
1922	13	322.88	7,491,500	12,640,600	114,683
1923	15	927.45	118,077,959	110,638,250	12,265,000
1924	14	869.25	21,022,800	34,845,535	3,440,388
1925	13	569.39	18,074,300	18,329,555	53,000

(a) Data not available.

Table IV—Electric Railway Receiverships as of Dec. 31, 1925

New England States	Year of Receiver-ship	Miles of Single Track	Outstanding Securities: Capital Stock	Funded Debt	Receivers' Certificates
CONNECTICUT					
Danbury & Bethel Street Ry., Danbury	1917	13.00	$320,000	$588,500	$100,000
Hartford & Springfield Street Ry., Warehouse Point	1918	48.00	785,000	961,000	None
MASSACHUSETTS					
Boston & Worcester Street Ry., Framingham	1925	83.00	2,482,200	2,520,000	None
Connecticut Valley Street Ry., Greenfield (1)	1921	47.05	620,000	580,000	None
Milford, Attleboro & Woonsocket Street Ry., Springfield (2)	1924	29.73	315,000	300,000	None
NEW HAMPSHIRE					
Laconia Street Ry., Laconia (3)	1925	8.00	140,000	91,000	None
Portsmouth, Dover & York St. Ry., Portsmouth	1917	12.00	.....	707,000	30,000
VERMONT					
Barre & Montpelier Traction & Power Co., Montpelier	1920	9.75	120,000	100,000	None
Net receiverships Dec. 31, 1925, 8 Cos.		250.53	4,782,200	5,847,500	130,000
Eastern States					
DISTRICT OF COLUMBIA					
Washington-Virginia Ry.	1923	40.00	2,378,300	5,614,000	None
MARYLAND					
Cumberland & Westernport Electric Ry., Frostburg	1925	25.00	625,000	655,000	None
NEW JERSEY					
North Jersey Rapid Transit Co., Hohokus	1912	18.00	800,000	800,000	None
Morris County Traction Co., Morristown	1923	68.98	300,000	4,179,000	None
NEW YORK					
Binghamton Ry., Binghamton	1925	49.52	978,895	2,812,825	None
Brooklyn Heights R.R., Brooklyn	1919	5.12	200,000	250,000	None
Buffalo & Lackawanna Traction Co., Buffalo	1918	8.80	55,000	1,000,000	None
Hamburg Railway, Buffalo	1920	21.72	None	750,000	None
Hornell Traction Co., Hornell	1917	10.90	117,900	150,000	2,000
Long Island Electric Ry., Jackson Heights	1924	24.97	600,000	600,000	None
Ithaca Traction Corporation, Ithaca	1924	11.62	400,000	763,000	None
New York & Long Island Traction Co., Jackson Heights	1923	50.76	1,000,000	1,000,000	None
New York & Queens County Ry., Jackson Heights	1923	43.65	3,235,000	1,500,000	None
Manhattan & Queens Traction Corp., Long Island City	1917	21.66	20,000	25,946	None
Second Avenue R.R., New York	1908	26.35	1,862,000	5,720,000	3,140,000
Staten Island Midland Ry., New York	1920	28.68	1,000,000	1,000 000	3 000
Steinway Railway, New York	1922	31.11	None	1,500,000	None
Westchester Street R.R., New York	1920	16.32	700,000	168,000	None
Penn Yan & Lake Shore Ry., Penn Yan	1918	8.50	94,000	100,000	None
Ogdensburg Street Ry., Potsdam	1922	7.74	150,000	150,000	None
PENNSYLVANIA					
North Branch Transit Co., Bloomsburg	1915	30.00	500,000	532,500	45,000
Net receiverships Dec. 31, 1925, 21 Cos.		549.40	15,016,095	29,270,271	3,190,000
Central States					
ILLINOIS					
Alton, Granite & St. Louis Traction Co., Alton	1920	62.00	3,189,000	3,000,000	None
Chicago & Interurban Traction Co., Chicago	1922	50.00	1,000,000	1,816,000	None
Peoria Railway Terminal Co., Peoria (4)	1922	25.28	1,000,000	2,444,000	None
INDIANA					
Union Traction Company of Indiana, Anderson	1924	450.53	11,500,000	15,381,000	None
Ft. Wayne, Van Wert & Lima Traction Co., Ft. Wayne	1921	61.63	1,000,000	1,470,000	None
Indianapolis & Cincinnati Traction Co., Indianapolis	1925	101.00	3,600,000	2,400,000	112,000
KENTUCKY					
Owensboro City Railroad, Owensboro	1923	12.50	75,000	400,000	None
MICHIGAN					
Detroit United Ry., Detroit	1925	613.89	15,375,000	29,745,500	None
Grand Rapids, Holland & Chicago Ry., Jackson	1924	80.93	1,324,700	1,500,000	None
Houghton County Traction Co., Houghton	1921	32.15	957,200	660,000	None
Michigan Railroad, Jackson	1924	173.84	4,000,000	8,050,000	None
MINNESOTA					
Wahpeton-Breckenridge Street Ry. (7)	1925	1.00	42,500	None	None
St. Paul Southern Electric Ry., Hastings	1918	17.54	658,225	425,400	None
Mesaba Railway Co., Virginia (5)	1924	38.00	2,260,000	1,581,000	10,000
MISSOURI					
Kansas City, Lawrence & Topeka Electric Ry., Kansas City	1919	12.00	250,000	400,000	None
Kansas City Railways, Kansas City	1920	318.04	100,000	29,959,316	None
Missouri Electric Railroad, St. Louis	1919	20.97	1,000,000	700,000	None
United Railways Company of St. Louis	1919	463.18	41,296,000	50,690,000	4,200,000
OHIO					
Cincinnati, Lawrenceburg & Aurora Electric Street R.R., Cincinnati	1913	31.67	808,900	750,000	None
Dayton, Springfield & Xenia Southern Ry., Dayton	1923	27.97	500,000	422,400	None
Cincinnati & Dayton Traction Co., Hamilton	1920	91.07	1,250,000	3,250,000	None
Hocking-Sunday Creek Trac. Co., Nelsonville (6)	1923	14.99	223,000	300,000	None
Indiana, Columbus & Eastern Traction Co., Springfield	1921	201.49	4,025,000	7,900,000	200,000
Tiffin & Fostoria Ry., Tiffin	1925	15.00	(8)	(8)	(8)
Dayton, Covington & Piqua Traction Co., West Milton	1922	34.00	1,150,000	550,000	18,000
Net receiverships Dec. 31, 1925, 25 Cos.		2,950.67	96,584,525	163,794,616	4,540,000
Western States					
KANSAS					
Kansas City, Kaw Valley & Western Ry., Bonner Springs	1924	42.31	740,500	1,374,500	None
Joplin & Pittsburg Railway, Pittsburg	1924	94.52	7,000,000	3,078,500	None
MONTANA					
Helena Light & Railway Co., Helena	1925	18.50	935,000	878,000	None
OKLAHOMA					
Oklahoma Railway, Oklahoma City	1924	138.45	5,595,900	5,815,000	None
Tulsa Street Railway, Tulsa	1925	23.00	580,000	771,000	None
UTAH					
Salt Lake & Utah R.R., Salt Lake City	1925	96.71	5,043,700	2,644,200	100,000
Net receiverships Dec. 31, 1925, 6 Cos.		413.49	19,895,100	15,561,200	100,000
Recapitulation for United States					
Net receiverships Dec. 31, 1925, 60 Cos.		4,164.09	136,277,920	213,473,587	7,960,000

The passenger business on this road is small, but as a freight carrier it is of much importance in establishing through service.

The Columbus, Newark & Zanesville Traction Company, comprising 91 miles of track, was reorganized early in the year as the Southern Ohio Public Service Company.

Three small roads discontinued operation, receivers were discharged and the properties were dismantled. These were the Port Jervis Traction Company with a mileage of 4.78; the Alamance Railway, 8.40 miles, and the Charleston-Isle of Palms Traction Company, 9 miles; a total of 22 miles.

The New York Railways is shown as having terminated its receivership. This property was reorganized in 1924 and has been operated by the New York Railways Corporation for more than a year. Due to a technicality the receiver has not been formerly discharged by the court, but as the old company is no longer an operating company it has been shown as emerging from receivership.

A complete story of the rehabilitation of the Interstate Consolidated Street Railway, Attleboro, Mass., was published in the Aug. 29 issue of this paper, page 321. The Toledo & Western Railroad was purchased outright at foreclosure sale by the Toledo & Western Railway and is now being operated as an important part in the latter's transportation service. Only two railways in Florida were in receivership at the beginning of the year, The Jacksonville Traction Company and the Pensacola Electric Company. Both of these roads terminated their receiverships during the year and have been restored to their owners.

The mileage of roads going into receivership this year was greatly increased by the appointment of a receiver for the Detroit United Railway, about 614 miles of track being involved in this one. Operations of the property have been materially curtailed since the lines in Detroit were sold to the city some two years ago.

Two other roads of more than 100 miles went into receivership during the year. The Oklahoma Railway,

(1) Practically all the property has been liquidated but receiver not yet discharged.
(2) All the property has been sold and assets are being distributed. Receiver not yet discharged.
(3) Sold at foreclosure sale.
(4) Foreclosure sale advertised for Jan. 6, 1926.
(5) Receiver appointed March 7, 1924.
(6) Sold at foreclosure sale Dec. 4, 1925. Now under process of reorganization.
(7) Operations permanently abandoned.
(8) Information not available.

Table V—Receiverships Terminated and Foreclosure Sales During 1925

Receivers Discharged With or Without Foreclosure Sales or Following Abandonment	Miles of Single Track Involved	Outstanding Securities: Stocks	Bonds	Receivers' Certificates	
Interstate Consolidated Street Ry., Attleboro, Mass. (1)	25.97	$275,000	None	None	Sold at foreclosure sale in 1925 and reorganized as Interstate Street Railway
Northern Massachusetts Street Ry., Greenfield, Mass	44.09	500,000	500,000	.....	Property liquidated and receiver discharged Dec. 12
New York Railways, New York, N. Y.	85.01	17,495,060	48,673,027	None	
Port Jervis Traction Co., Port Jervis, N. Y.	4.78	30,000	70,000	None	Road has been dismantled.
Slate Belt Transit Co., Pen Argyl, Pa.	18.00	180,000	180,000	None	Reorganized and receiver discharged.
Frankford, Tacony & Holmesburg St. Ry., Philadelphia, Pa.	16.18	500,000	400,000	None	Purchased and operated by the Philadelphia Rapid Transit Company.
Beech Grove Traction Co., Indianapolis, Ind.	3.90	150,000	100,000	None	Property sold at receiver's sale and reorganized as Beech Grove Traction Corporation.
Chicago, Lake Shore & South Bend R.R., Michigan City, Ind.	70.86	6,000,000	4,692,000	None	Sold at foreclosure sale and reorganized as Chicago, South Shore & South Bend R.R.
Maumee Valley Ry., Perrysburg, Ohio	23.21	1,000,000	800,000	None	Receiver discharged
Ohio River Electric Railway & Power Co., Pomeroy, Ohio	13.79	300,000	315,000	None	Property sold and reorganized as Ohio River Railway & Power Co.
Cleveland, Alliance & Mahoning Valley R.R., Ravenna, Ohio, 1920	46.00	1,100,000	1,100,000	8,000	Purchased at receivers' sale by Northern Realty Co., a subsidiary of Northern Ohio Traction & Light Co., and operating as freight interurban.
Toledo & Western R.R., Toledo, Ohio	89.00	2,000,000	2,000,000	None	Purchased by the Toledo & Western Railway at foreclosure sale.
Columbus, Newark & Zanesville Traction Co., Springfield, O.	91.05	2,025,000	4,704,000	190,000	Reorganized as the Southern Ohio Public Service Co.
Jacksonville Traction Co., Jacksonville, Fla.	60.00	1,500,000	3,267,000	128,791	Receiver discharged.
Pensacola Electric Co., Pensacola, Fla.	24.49	1,100,000	1,721,770	None	Purchased by Southeastern Power & Light Co. Receiver discharged Feb. 10.
Valdosta Street Ry., Valdosta, Ga.	5.00	50,000	1,500	$383	Receiver discharged
Alamance Railway, Burlington, N. C.	8.40	60,000	120	None	Road has been dismantled.
Charleston-Isle of Palms Traction Co., Charleston, S. C.	9.00	527,000	250,000	None	Company liquidated and operations ceased.
Denver Tramway Co., Denver, Colo.	226.14	6,156,300	17,351,710	None	Receiver discharged and reorganized as Denver Tramway Corporation.
Total of receiverships terminated (19 companies)	864.87	$40,948,360	$86,126,127	$319,174	
Foreclosures but Receivers Not Yet Discharged					
Laconia St. Ry., Laconia, N. H.	8.00	$140,000	$91,000	None	
North Branch Transit Co., Bloomsburg, Pa.	30.00	500,000	532,500	$45,000	
Hocking-Sunday Creek Traction Co., Nelsonville, Ohio	14.99	223,000	300,000	None	Foreclosure sale Dec. 4. Now being reorganized as Nelsonville-Athens Electric Ry.
Tiffin & Fostoria Ry., Tiffin, Ohio	15.00	.....	.....	.....	Information not available.
Total of foreclosure sales without receivers' discharge (4 companies)	67.99	$863,000	$923,500	$45,000	
Foreclosures Without Receiverships in 1924					
Phoenixville-Valley Forge & Strafford Electric Ry., Phoenixville, Pa.	5.50	.....	.....	.....	Information not available.
Mt. Manitou Park & Incline Ry., Colorado Springs, Colo.	1.25	130,000	125,575	None	
Gainesville Ry., Gainesville, Ga.	10.00	.....	.....	.....	Service abandoned.

138.4 miles, and the Indianapolis & Cincinnati Traction Company, 101 miles. Next to these in importance are the Salt Lake & Utah Railroad, the Boston & Worcester Street Railway and the Chicago, Lake Shore & South Bend Railway, mentioned in a foregoing paragraph.

Next to the Detroit United Railway the largest properties remaining in receivership at the close of last year are the United Railways of St. Louis, with a total of 460.93 miles, and the Kansas City Railways, with 314.88 miles. Both of these companies are now in the process of reorganization. It was planned to sell the Kansas City property at foreclosure on Dec. 15 but it has been found necessary to postpone the sale until early this month. The reorganization plan has been approved by a large majority of the security holders and is acceptable to the court. The St. Louis company will undoubtedly perfect its reorganization plans and emerge from receivership during this year.

Super-Highway Plan Progressing in Detroit

POPULAR attention was vividly attracted to a suggestion made by the Detroit Rapid Transit Commission, a little more than a year ago for the construction of a system of super-highways, each 212 ft. wide and extending from Detroit radially in a number of directions. The plan was described on page 52 of the issue of this paper for July 12, 1924. Recently two more reports bearing on this subject, but relating more particularly to means for expediting traffic downtown, have been presented to the city authorities. One of these was an analysis of traffic conditions on a number of Detroit business streets made by the Rapid Transit Commission. The other was a report entitled "Carrying Out the Master Plan" by an advisory committee, made up of the corporation counsel, the prosecuting attorney of Wayne County, the Board of County Auditors, the City Plan Commission and the Rapid Transit Commission.

The former report summarizes the traffic conditions of the Grand Boulevard and streets leading to it on June 19, 1925, for a period of twelve hours from 7 a.m. to 7 p.m. The Grand Boulevard belts the city at a distance of about 3 miles from the center and is 11 miles long. Everywhere it is 150 ft. wide and in some places 200 ft. wide, and the Rapid Transit Commission says that it is an example of far-visioned city planning that may well serve as an inspiration to those responsible for the present planning of the city of the future. It has now come to be one of the most used traffic arteries of the city, articulating as it does with all the radial avenues which are characteristic of the city plan of Detroit.

It is found that at times the movement of traffic on the Boulevard amounts to 679 vehicles per traffic lane. This number is near the point of saturation, which is believed to be 800 vehicles per traffic lane under the present "Stop and Go" regulations. To improve conditions, the commission recommends the widening of a number of streets and opening of others, the most important being the development of Vernor Highway to be 150 ft. wide at points and 120 ft. wide at other points, extending north and south through the city, at a cost of $5,279,000.

The report of the advisory committee approved this plan and discussed the legislation necessary and the cost for this and other proposed improvements.

The News of the Industry

Seven-Cent Ticket Rate in Spokane

Application for a 10-cent cash and a 7-cent ticket fare to become effective on Feb. 1, 1926, was filed by the Spokane United Railways, Spokane, Wash., on Dec. 28. Unless a protest is made the fare will become effective automatically. The comany had petitioned for a 10-cent cash fare, with a ticket rate of thirteen for $1 or 7.69 cents each. Under the new tariff filed five tickets would be sold for 35 cents. State officials indicated that the Spokane United Railways management and the City Council of Spokane had reached an agreement on this rate.

Formal notice was filed on Oct. 16 with the Mayor and the City Commissioners of Spokane to the effect that the Spokane United Railways intended filing a schedule for increased rates with the Department of Public Works of the State of Washington calling for a 10-cent cash fare, a 7.69-cent ticket rate and with school tickets remaining at 4 cents. Stern opposition to the proposed increase was voiced by Charles A. Fleming, Mayor and Commissioner of Public Utilities of the city, in his report to the City Council on Nov. 5. The present rate is 7 cents cash with a 6-cent ticket rate.

Ordinance Looks Toward Cleveland Subway

Petitions for an initiated ordinance, to float a $30,000,000 bond issue for subways in Cleveland, are in circulation. The movement was started by Councilman Peter Witt, formerly city street railway commissioner. Five thousand signatures are needed to put the ordinance before the City Council. The petition calls for three lines, one across Superior Avenue from the easterly limits of the city, via the high level bridge and Clifton Avenue on the west side; a second running westerly from Cedar Avenue and East Boulevard, on the east side, to University Circle, west on Euclid to Huron Road and over the proposed Huron-Lorain bridge to West 35th Street, and a third northerly from East 93d Street and Miles Avenue, to Buckeye Road and northwesterly to Woodland Avenue and to the Public Square. Mr. Witt's idea is to pay off the bonds in 25 years and to have them bear 6 per cent interest.

Mayor Signs $1,200,000 Offer for Rainier Line

Mayor Edwin J. Brown recently signed the ordinance passed by the City Council of Seattle, Wash., binding itself to an offer of $1,200,000 for the lines of the Seattle & Rainier Valley Railway. Immediately a referendum move was started to put the deal to a vote of the citizens of Seattle. Petitions for such a referendum have been circulated by those residents of Rainier Valley who oppose the purchase. As a countermove, residents of the valley who favor the purchase, and who claim to be 98 per cent of the residents, issued postcards to all Seattle voters urging against the referendum and requesting voters not to sign the petition. The card points out that "purchase will give the city monopoly of street railway transportation, assuring valley residents equal rights and privileges with the rest of the city." The campaign for referendum is headed by E. F. Blaine, former chairman of the State Public Service Commission, aided by E. F. Markham, president of the Rainier Valley Commercial Club.

Pay of Connecticut Men Unchanged

Arbitrators Continue Base Rate at 60 Cents, but Increase Bus Men 3 Cents—Shop Men Benefited—Minority Report to Be Filed —Company Sought Reduction

THERE will be no increase in pay for trainmen of the Connecticut Company, New Haven, but 3 cents additional an hour has been awarded to bus operators. This establishes a differential of 10 cents an hour for bus operators over the basic rate of 60 cents an hour, instead of the present 7-cent differential. It represents the finding of the board of arbitration, concurred in by the neutral arbitrator and the arbitrator for the company. The member of the board chosen by the men dissented. The finding was made public on Dec. 22.

The request of the men that the right of seniority be extended to include the operation of buses was denied by the board on the grounds that "it would result in great injustice to the present motor bus operators if their right to maintain their present jobs should be taken away . . .," and further that "the offer of the company to extend the right of seniority to the trolley operators in all cases where any vacancy hereafter occurs in existing bus lines and to all new buses hereafter put in operation, is an eminently just and fair one and is hereby sustained."

Other Slight Changes

The award of the board effected another slight change in wages, concerning only about twenty men, in that it established that all shop and power station employes, some of whom are now receiving less pay than others for the same work, should be paid an equal wage and that this should be the highest rate now paid by the company in these various lines.

An unusual feature of the award is that the bus operators, receiving the only wage increase, made no demand for a rate of pay higher than the one-man trolley operators. About 100 bus operators are affected by the increase and with the retroactive provision they will receive approximately $50 each in back pay.

As set forth in the award the present rates of pay to trolleymen are as follows: 53 cents an hour for the first three months of employment; 56 cents an hour for the next nine months, and thereafter 60 cents an hour as the general basic rate, plus a differential rate of 7 cents an hour for operators of one-man cars and buses.

The demands of the men were that these rates be increased to 70 cents in the first instance; to 72 cents in the second and 75 cents in the third, the basic rate. They demanded that the differential rate for one-man car and bus operators be made 15 cents above the basic rate.

The Connecticut Company sought to reduce the wage scale to 47 cents in the first instance, to 51 in the second and to 55 in the third or basic rate. The company asked for a reduction of the differential rate to 5 cents above the basic rate.

In reviewing the claims of each side the arbitration board found that the men claimed there had been a shortage or "lag" in pay over a period of twelve years and that the rate should be increased so this amount would be made up over the same period of time. The Connecticut Company claimed there should be a reduction in the future because of the "excess" of actual earnings now over the cost of living during the same period.

The board held that neither claim was valid because of arbitration agreements covering the years from 1921 to 1925, which precluded bringing up such questions again, the legal theory of arbitration being that the disposition of its subject matter is final.

The decision was written by Charles Kleiner of New Haven, neutral member and chairman of the arbitration board which included Joseph F. Berry, Hartford, representing the Connecticut Company, and James H. Vahey, Boston, representing the union. Mr. Berry added his signature to the finding which was signed by Mr. Kleiner, and the award with its requirement of two signatures becomes final.

Mr. Vahey did not sign the finding. It is expected that he will file a minority decision.

"We Are"—"Will You" Slogan in Allentown

The Lehigh Valley Transit Company, Allentown, Pa., is conducting an intensive safety campaign through its general safety committee. The members of the committee are visiting personally all owners and operators of trucks in the territory of 218 miles of track traversed by the company and are talking to people on the street corners and in the cars. The members of the committee are designated by an arm band with large green letters, "General Safety Committee L. V. T. Co." Talks have been given before all the luncheon, civic and woman's clubs in the entire district. Newspaper articles have appeared periodically. Mass meetings of the men have been held, with addresses by the mayors and other officials of the various cities.

At the mass meeting of the men held on Dec. 18 in the assembly hall of the company four prizes were awarded for the best safety suggestions brought in by the men. One of the prizes was awarded for a slogan which will be adopted by the company and used on the cars of the company after the first of the year. The slogan is as follows:

WE ARE
WILL YOU
?
ASK THE
MOTORMAN OR CONDUCTOR

All employees will wear buttons with this slogan on it, "the object being, we are working to safeguard the highways, will you co-operate with us?" Another prize was awarded for a poem entitled "The Head-Gear." This was composed by one of the conductors. This poem is appearing in the newspapers over the entire system of the company.

The drive has been one of the most successful and the most interesting that has ever been conducted by the company. It is under the direct supervision of H. F. Dicke, vice-president and general manager, and E. C. Spring, general superintendent.

Key System Passengers Questioned About Riding Habits

In an effort to solve two transportation problems affecting the East Bay cities of California the State Railroad Commission has drawn up a questionnaire for passengers traveling to and from Oakland and San Francisco on ferryboats of the Key System Transit Company and the Southern Pacific Company.

It is hoped that the answers to this questionnaire will shed light on the contention of the Key company officials, who are seeking increased ferry and car fares, that the fares now being collected are too low for the average trip mileage and that they also will answer the question as to whether the Key company is over supplied with ferryboats.

Four questions are being put to ferry passengers:

1. Is this a single trip or are you traveling upon commute or free ticket?
2. At which street or station do you leave the train?
3. After leaving the train what is your immediate destination and that is near the intersection of what street?
4. If you use a street car to complete your trip, what is the number or letter of the route used?

Since the Key company ordered two new ferryboats built recently the contention has been raised that the company does not need them, that it already has too many boats and that it maintains an uneconomical service throughout the day, with the result reflected in the net revenues and a demand for higher ferry fares.

To this Key company officials have replied that some of their old boats now in service cost so much to maintain that it has been deemed an economy to buy new ones to replace them.

Making the Punishment Fit the Crime

Drivers of motor vehicles in Buffalo, N. Y., who approach within 7 ft. of a standing street car are being arrested for violation of the traffic ordinances as the result of a campaign started by the Buffalo *Courier*, a newspaper, with the co-operation of the police department and the International Railway. The railway reproduced a cartoon published in the *Courier* showing the 7-ft. safety zone around standing street cars and these were displayed on cards attached to the front and rear ends of every street car in the city. Fines have been imposed upon several hundred motorists in this campaign, with the result that accidents resulting from drivers injuring passengers boarding and alighting have been materially reduced.

COMING MEETINGS
OF
Electric Railway and Allied Associations

Jan. 6—American Society of Civil Engineers, Engineering Societies Building, 29 West 39th Street, New York, N. Y.

Jan. 8—Metropolitan Section A. E. R. A., Engineering Societies Building, 29 West 39th Street, New York, N. Y., 8 p.m.; Informal dinner, Keen's Chop House, 72 West 36th Street, 6:15 p.m.

Jan. 14-15—Kentucky Association of Public Utilities, Annual Meeting, Brown Hotel, Louisville, Ky.

Jan. 20-21—Central Electric Traffic Association, Miami Hotel, Dayton, Ohio.

Jan. 22-23—Central Electric Railway Accountants' Association, Miami Hotel, Dayton, Ohio.

Jan. 26-29—Society of Automotive Engineers, Annual Meeting, Detroit, Mich.

Jan. 27—New York Electric Railway Association, Hotel Commodore, New York, N. Y.

Jan. 28-29—Central Electric Railway Association, Lincoln Hotel, Indianapolis, Ind.

Feb. 11—Central Electric Railway Master Mechanics' Association, Portage Hotel, Akron, Ohio.

April 13-16—Southwestern Public Service Association, Galveston, Tex.

$12,000,000 Electrification for Long Island

Vice-President Le Boutillier of the Long Island Railroad on Dec. 24 laid plans before Chief Engineer Randolph Nixon of the Public Service Commission for further electrification of the Long Island from 1926 to 1929 at a cost of $12,600,000.

The improvements follow:

In 1926, electrification of the Bay Ridge Division and the Bay Ridge yards, $4,040,000.

In 1927, electrification of the Montauk Division, from Long Island City to Holban yards and the yards at Long Island City, Blissville, Fresh Pond and Holban, $6,010,000.

In 1928, electrification of freight sidings on the North Side Division, the main line between Long Island City and Jamaica and on the Atlantic Division, $1,205,000.

In 1929, electrification of the remainder of freight sidings in territory now electrified for passenger service, $595,000.

With the exception of $710,000 in 1926 for seven electric locomotives for electrification of the Floral Park-Mineola extension from Hempstead Crossing to Valley Stream, Mr. Le Boutillier said the proposed expenditures have to do with freight lines only.

Wage Increase on Illinois Traction

A flat wage increase of 5 cents an hour, an increase of ½ cent in the mileage rate and 50 per cent increase in overtime with the provision that the present closed shop be maintained, are the terms of the new agreement between the Illinois Traction System and its trainmen. Under the new schedule the pay of motormen, conductors and brakemen will be from 55 to 70 cents an hour. The old agreement expired on Nov. 30, but the men continued at work pending an adjustment. Their contract provides that there shall be no interruption of service while negotiations on a new contract are under way. It is understood that the wage settlement applies only to the main line of the Illinois Traction System, which is exclusive of what is known as the Illinois Valley Division, which runs from Ottawa west.

On the Air with P.R.T.

After the Philadelphia captain of industry, his day at the office finished, has donned the old carpet slippers and stoked up the favorite pipe he can now tune in on station WLIT and hear the versatile artists of the Philadelphia Rapid Transit Company in action. Even to these lengths have the efforts toward building up a lasting spirit of public good will gone.

With the installation of a radio control room at its carhouse at Tenth and Luzerne Streets the P. R. T. made its opening bow to the radio public on Dec. 2. An unusually well-rounded program was given, over a period of two hours, by the P. R. T. Brass Band of 110 pieces, one of the largest industrial bands in the country; the P. R. T. String Club, of 25 instruments; the Temport Serenaders, a twelve-piece jazz orchestra which has made quite a name for itself in playing for various dances of the employees, and a mixed quartet. It is planned to continue the concerts on alternate Wednesday evenings.

Construction Work in Buffalo Ordered

The Public Service Commission under an order issued on Dec. 28 directs the International Railway, Buffalo, N. Y., as follows:

On or before July 1, 1926, to complete reconstruction of its tracks in Grant Street.

On or before Sept. 1, 1926, to complete reconstruction of its tracks in Walden Avenue from the east side of Genesee Street to the New York Central Railroad undercrossing.

On or before Nov. 1, 1926, to complete reconstruction of its tracks in Walden Avenue from the Erie Railroad undercrossing to the Delaware, Lackawanna & Western Railroad undercrossing.

The city, under a complaint filed, asked for an order to compel the railway to reconstruct the pavement in Main Street from Hertel Avenue to the city line and in Walden Avenue and Grant Street, it having entered into contracts for repavements, and had notified the railway to repave between and for 2 ft. outside its tracks. Commissioner Pooley, the sitting commissioner, in a memorandum approved by the commission, says the commission is not concerned with the question of repavement, that being governed by law requiring the railway to keep in permanent repair that part of the street occupied by it, and in case of neglect by the company the city can do the work at the expense of the company.

The commission says:

We are concerned, however, with regard to the manner in which street car lines are conducted and operated and with respect to adequacy, security and accommodations afforded by their service, and the scope of this investigation has been confined to a consideration of the safety of the tracks in question with respect to transportation of passengers.

Last Staten Island Line Electrified

The Staten Island Rapid Transit Company completed on Dec. 24 the electrification of its passenger train service. On Dec. 25 it operated its first electric train over the north shore division from St. George to Arlington.

Operations over the electrified system were initiated by General Superintendent M. L. McElheny. Officials of the company made the first trip. The new electric trains will reduce by four minutes the running time over the north shore division. The only steam locomotives still in operation by the company will be used to haul freight.

$98,000 Asked for Preparatory Work for Pittsburgh Subway

The recently created Department of Rapid Transit of Pittsburgh, Pa., has requested the City Council for twenty new positions with salaries totaling $60,884 annually. Besides, the department has asked for $13,116 for general expenses and special services and $24,000 for consulting engineer's fees and expenses. The appropriation request for next year aggregated $98,000. The Rapid Transit Department was created to supervise all city-owned transportation facilities, particularly the proposed $6,000,000 subway. Officials of the department, appointed last September, all serve without pay. A letter which accompanied the request for the appropriation said the estimates were based on the assumption that the Council, as a result of recommendations of the Traffic Commission, would take action soon to authorize subway construction.

Increase in Fare Asked in Shreveport

A petition for a change in rates for Shreveport, La., has been filed with the Louisiana Public Service Commission by the Shreveport Railways. The petition is an amendment to an original petition asking an 8-cent fare with a 4-cent fare for children.

The new rate asked is a straight fare of 7 cents for adults and 3½ cents for school children. The present rate is 7 cents cash fare, four tickets for 25 cents or seventeen for $1. School children pay a 2½-cent fare.

Capt. H. B. Hearn, president of the Shreveport Railways, announced that the company plans to increase service and to make other improvements.

Receiver Confident St. Louis Will Be Just

Rolla Wells, receiver for the United Railways, St. Louis, Mo., in a series of addresses to the employees in recent weeks, has expressed the belief that the public of the city will receive favorably an application from the company for a new franchise with a rate of fare sufficiently high to compensate capital for investing in the railway.

He has pointed out that the reorganization plan is fair to the public and that the public in turn should be fair to the investors in the railway's securities. In this connection he pointed out that the stockholders of the United Railways have not had a dividend in years and that it is manifestly unfair to ask the man who by his investment provides railway facilities to serve the public without pay.

In conclusion he expressed the belief that the changed attitude on the part of patrons, press and city officials toward the United Railways will result in the enactment of a franchise which will make possible the best railway service St. Louis has had in years.

News Notes

Traction Employee to Be Tried.—The trial of Harry H. Hershey, charged with embezzlement of $41,000 from three utility companies of Lancaster, Pa., will be held in the January term of court. Mr. Hershey was an employee of the accounting department of the Conestoga Traction Company.

Affirms Old Order.—The Public Service Commission on Dec. 28 affirmed its order made in January, 1925, in the matter of the operation of one-man cars by the International Railway in Buffalo. The order which dismissed the complaint of the city of Buffalo against the use of one-man cars and suggested supplemental rules for safety was reviewed in the ELECTRIC RAILWAY JOURNAL of Jan. 17, page 116.

Christmas Bonus Awarded at Nashville.—The management of the Nashville Railway & Light Company, Nashville, Tenn., played Santa Claus to its employees recently by distributing $3,240 in bonuses to men who have led the field in safe operation during the past three months. This amount made the year's total given to operating employees $11,222. Sharing this gift were 119 motormen and operators who had operated three months without an accident. They had attended every safety meeting held by the company. With them were 107 conductors.

Fares Advanced at Joplin.—The City Commission of Joplin, Mo., on Dec. 22 adopted a resolution to grant the Joplin & Pittsburg Railway an increase in street car and bus fares from 5 to 7½ cents. The new rate will be in effect during a trial period of six months, starting on Jan. 1. The proposal for increased fares was made by a committee of the Chamber of Commerce after it had studied the local transportation problems.

Fare Lowered.—The Public Utilities Commission of the District of Columbia has authorized the Capital Traction Company, Washington, D. C., to reduce the rate of fare on its Chevy Chase Loop bus line to 5 cents, with twenty tickets to be sold for $1. No transfer privileges will be extended to the users of this ticket.

Short Time Grant Sought.—Negotiations looking toward a short-time franchise for the Canton-Akron interurban line of the Northern Ohio Traction & Light Company have been started by A. C. Blinn, general manager. He asked the county for permission to operate without a franchise until 1927. The commissioners refused the request and declared they would give the company until Jan. 11 to obtain consent of a majority of the property owners for a renewal of the franchise. Mr. Blinn agreed to accept a new franchise if it specifically stated operation could be abandoned any time at the discretion of the management.

Wages Advanced Five Cents.—Employees of the Jacksonville Traction Company, Jacksonville, Fla., have received a pay increase of 5 cents an hour effective on Jan. 1. This increase is in addition to the 3 cents an hour granted in September. J. P. Ingle, general manager of the company, in announcing the boost said that the total of 8 cents over the 1925 scale would amount to $70,000 during 1926. Mr. Ingle said the increase was decided on as the result of the increased living costs in Florida. It will result in the average trainman of the company receiving approximately $165 per month.

Polite System Introduced—The Arkansas Central Power Company, Little Rock, Ark., has put its employees under the polite code, with a card bearing the car operator's name placed above the motorman's station. Superintendent Koonce is responsible for this innovation. He says banks and business houses find it a good way to establish better relations between their employees and the public. He believes that the men like the plan and show a pride in the representation given them.

Recent Bus Developments

Buses Authorized in Columbia

The dawn of the new year in Columbia, S. C., will see in operation a fleet of ten 29-passenger White buses of the "pay-as-you-enter" city type, a certificate for operation having been granted the Carolina Transit Company of Columbia, S. C., by Samuel McGowan, chief highway commissioner.

Ten buses will operate over five routes and will provide transportation facilities to sections of Columbia not now served by the street car system of the Columbia Railway, Gas & Electric Company. Suburbs will also be served and one town, New Brookland, across the Congaree River from Columbia. Ten-cent fares will be charged with 5-cent fares for school children and three tickets or tokens will be sold for 25 cents.

The granting of the certificate to operate came after negotiations which had been somewhat protracted. The transportation situation in Columbia has been much in the public eye in recent months, three factors being involved, the 10-cent jitneys, the street cars and the bus lines. The various stages in the controversy have been referred to in these pages.

After holding the application for the permit in abeyance for some time, during which efforts were made to find out what the people of the city wanted, the highway commissioner granted the petition for a certificate to operate. A number of communications were directed to the commissioner, practically all of these favoring the operation of the buses, and so the application was granted. In the meanwhile, the 10-cent jitneys continue their operations, though the City Council at a recent meeting passed an ordinance which gives it power of regulating the jitneys to operate on certain streets, should it deem such action advisable. The jitneys at present run anywhere they like, carry only white passengers and charge 10-cent fares.

Buses in Newton

Buses will take the place of railway cars in the town of Newton, Mass., and in those adjacent towns that are served by the Middlesex & Boston Street Railway. In a recent all-night special session the Newton Board of Aldermen granted the company an exclusive franchise for the operation of buses. Within 60 days the cross-town and Bemis lines of trolleys are to be replaced by buses. The cross-town cars run from Newton to Waltham and the Bemis line runs between Newton and Waltham.

Another line from Lake Street to Newton Highlands, via Newton Center, and to Watertown and Needham, will be motorized by Oct. 26, 1926, or by January, 1927, at the latest. Extra service is to be required of the company as soon as these three lines are provided with buses. The company asked for a subsidy of $10,000 from the town, but this subsidy was refused by the Aldermen. Only two lines of street cars will be left when the new buses are in operation.

Bus Lines in Jamestown to Suspend

Notice that it intends to discontinue bus service on all lines in Jamestown, N. Y., in the near future was served upon the City Council on Dec. 22 by the Jamestown Motor Bus Transportation Company. There was no open session discussion of the proposal to abandon the bus lines by the Council, but that body voted to have a special committee of five men make a general survey of the bus situation, as well as the proposal of the Chautauqua Traction Company to abandon its line between Ashville and Mayville and of the Lake Erie Motor Coach Lines' request for permission to operate buses between Jamestown and Buffalo.

The owners concluded:

1. That even without considering anything for depreciation, the expense of operating the Jamestown Motor Bus Corporation is greater than its revenue. In other words, the buses have not paid the actual cash outlay necessary from day to day to keep them going.

2. That during approximately four years of operation the entire investment of $50,000 in buses has been wiped out by depreciation and the company has been unable to earn any reserve to make the depreciation good.

W. A. Broadhead of the railway said:

> We are faced with this problem, shall we now put into the company enough additional capital (at least $30,000) to purchase six new buses? Not only is there no prospect that we would earn any return on the money so invested, but it appears that the entire investment would be wiped out by the rapid depreciation against which no reserve could be earned.
>
> The deficit incurred in the last sixteen months is $12,738. It would be nothing short of fool-hardy to make a new investment in this kind of business.
>
> The officers of this company are not unappreciative of the importance of this transportation in the development of the city. These conclusions are reached with regret but they are cold facts which face us when the demand for more money for new equipment is made.
>
> At a time in the near future when use of the present equipment becomes impracticable this company will be obliged to discontinue its operations. That date we have not fixed yet but it will not be long deferred.
>
> Pending the fixing of such date we will be glad to have you examine the auditors' statements in detail and give the transportation problem your careful consideration, and we will be glad to furnish you any information which will be of service to you.

Some four years ago the Jamestown Motor Bus Corporation engaged in the operation of a bus service under a franchise from the city of Jamestown. The decision to stop operation is understood to have been based on an examination made by the administrators of the estates of Shelden B. Broadhead and Almet N. Broadhead, who had financed the operation. The Broadheads control both the Jamestown Street Railway and the Chautauqua Traction Company.

Service at Cost Suggested for Washington Buses

F. W. Doolittle, vice-president of the North American Company, which has taken over the routes of the Washington Rapid Transit Company, operating buses in Washington, D. C., wants rates fixed to provide a limited return on a fixed valuation, with the surplus devoted to extending bus facilities. Mr. Doolittle wants the bus properties valued by the Public Utilities Commission and a reasonable return on that valuation allowed in the fixing of fares. The return in the case of other public utilities in the District is 7½ per cent. Over and above this Mr. Doolittle would put the profits into cutting fares and improving service. Mr. Doolittle said:

> The company's Sixteenth Street line is paying well. This should not be taken as an indication of the profitableness of bus operation under existing rates of fare, as adequate service to the community will require transportation routes upon which the same density of business cannot be expected to develop.
>
> It is intended to apply to the commission to prescribe a service-at-cost procedure, by which the returns the company will be permitted to earn will be definitely understood, this plan to provide that excess earnings be utilized for extensions of service or reductions in fares.

Alexander Shapiro of the Milwaukee Electric Railway & Light Company, controlled by the North American Company, has been sent to Washington to study the present bus system.

Oklahoma City Bus Lines Create New Business

The bus lines recently established by the Oklahoma Railway, in Oklahoma City, to supplement street car service are actually creating new business for the company. The North Hudson and Walker bus line established several weeks ago is already making money for the company. A new line, to be known as the Blackwelder line, has been established to run from the terminal and down-town shopping district northwesterly to and beyond the Oklahoma City University. The receipts on this line are encouraging. According to the receivers many automobile owners who have not heretofore patronized the street cars are riding these buses because by so doing they eliminate parking problems and are carried direct to the retail center of the city at less cost.

Bus Company in Napa Formed

Articles of incorporation of the Napa Valley Bus Company, a subsidiary of the San Francisco, Napa & Calistoga Railway, Napa, Cal., were filed recently and the new company has applied to the State Railroad Commission for a permit to operate an auto stage line through the Napa Valley between Vallejo and Calistoga.

It will be necessary for the electric railway to take off some of its trains in the near future owing to a decrease in traffic, it is stated, and it is the intention of the railroad to fill any such vacancies in its schedule with the motor stages. The buses will be used for passenger service only, and the passengers' baggage, which may be checked on their ticket, will follow later on an electric train.

Bus Service Enlarged.—The New York, New Haven & Hartford Railroad has been given authority by the Public Utilities Department of Massachusetts to operate a bus line between the towns of South Braintree and North Easton, the route passing through Braintree, Randolph, Stoughton, Easton and into North Easton. At the same time the company was authorized to operate buses from North Easton to Canton, passing through Easton, Stoughton and Canton. The town of Needham voted, in town meeting, to instruct its Board of Selectmen to grant the New Haven Railroad a license to run buses through the town on the way from Needham Junction to Newton Highlands, and it is expected that this service will be started immediately.

Buses in Erie.—The Erie Coach Company, a subsidiary of the Erie Railways, Erie, Pa., is operating four 29-passenger Yellow buses over a route of 3 miles at a 10-cent fare. Some time ago A. R. Myers, president of the company, said that he was prepared to operate a bus line from the West Lake Road over the new state highway leading to the Erie Peninsula if the necessity existed for such travel.

Bus Lines to Pay $200.—Under the terms of a new ordinance adopted by the Common Council of Neenah, Wis., effective Jan. 1, 1926, bus lines operating in the city will be required to pay a license fee of $200 instead of $50 for each bus operated as the share of the growing cost of maintenance of streets. Several of the Councilmen favored raising the fee to $500 a year for each bus, but it was felt that in a test case the courts might hold this fee unreasonable.

New P. R. T. Line Started.—The Philadelphia Rural Transit Company, a subsidiary of the Philadelphia Rapid Transit Company, Philadelphia, Pa., has added a new bus route to its city-wide system. The new route, authorized by the Council and approved by the Public Service Commission, was planned to increase transportation facility along the Delaware riverfront. The route will provide transportation along the port of Philadelphia, particularly for workers of the industries located there. The standard single-deck gas-electric buses are being operated. The fare is 10 cents with 3-cent exchanges to all connecting lines.

Bus Line at Cincinnati Bought.—The Cincinnati Street Railway, Cincinnati, Ohio, has bought from Dale McKay the bus line which he has been operating between Mariemont and Oakley. The purchase is subject to approval by the Ohio State Public Utilities Commission, which will hold a hearing at Columbus Jan. 19. At the same time the commission will hear an application of the railway to increase the equipment and service of the bus line from three to nine buses and to extend the line from Oakley to Government Square. The Cincinnati Street Railway proposes to run buses twenty minutes apart from 6 a.m. to midnight. In the event the sale is approved by the commission, it will mark the first transaction of its kind since the railway announced its decision to enter the bus field.

Financial and Corporate

Deficit Piles Up Under City Operation

Thirty-Mile Road on Staten Island Lost $503,768 in Five Years Under Hylan

The Staten Island Midland Railway, operated by the city authorities of New York, piled up for the fiscal year ended June 30, 1925, the largest deficit for any similar period of the five years of municipal operation. The road went behind $103,595, exclusive of any interest or depreciation charges. These figures were derived from the annual and monthly reports of the Department of Plant and Structures made to the Transit Commission.

As the road carried 9,112,421 passengers in the year, the deficit was 1.14 cents per passenger. In other words, the passenger paid a 5-cent fare and the city paid the deficit in the cost of his ride out of taxes.

The Staten Island Midland Road went into receivership, stopped operation and was finally taken over by the city under lease five years ago as an experiment in municipal operation. In no year within this period has the city taken in enough to pay all the expenses.

1.69 Cents Lost per Passenger

If the sum of $50,000, the interest at 5 per cent on the $1,000,000 of first mortgage 5 per cent bonds of the railroad, were included in the results of operation, as they would have to be if the road paid its own way, it would increase the deficit to 1.69 cents per passenger. For the first seven months of operation, 1920-1921, the deficit was at the rate of 0.8 cents per passenger; for the fiscal year 1922, 0.61 cents per passenger; for the fiscal year 1923, 0.39 cents per passenger; for the fiscal year 1924, 0.93 cents per passenger, and including the 1925 deficit, an average of 0.7 cents per passenger over the whole period of municipal operation.

During the period from Dec. 1, 1920, to June 30, 1925, 38,961,517 revenue passengers were carried. The total deficit from operation for this period was reported as $274,602. The addition of the interest of $50,000 annually on the bonds of the company would increase the deficit over the entire period to $503,768, or a deficit over the whole period of 1.29 cents per revenue passenger.

Other items would tend to make the actual deficit even greater. No provision has been made for depreciation during the last three years, either on the equipment purchased by the city or on the property taken over from the Staten Island Midland Railway. Prior to 1923 only $21,530 was set aside for depreciation. In addition, certain rehabilitation work amounting to $163,644 has been charged to capital as recoverable from the receiver of the Staten Island Midland Railway. Ordinarily, part of this amount would be charged against operating expenses and thus further increase the deficit, but in this instance, under the agreement with the railroad, it has been entirely excluded from operating expenses.

The latest report of operations of the Staten Island Midland on file with the Transit Commission is for the month of November, 1925. The deficit for this month is $20,311, compared with $9,407, in November, 1923, and $6,584.24 in November, 1924.

Net Earnings Up in Baltimore

The United Railways & Electric Company, Baltimore, carried 204,341,300 revenue passengers from Jan. 1 to Nov. 30, inclusive. This figure compares with 209,082,005 for the corresponding period of 1924. The number of revenue passengers in November, 1925, was 18,718,923, an increase over November, 1924, when the figure was 18,274,054. The decrease in the total for the eleven-month period is largely due to the extension of fare zones which took place in 1925.

The passenger revenue during the eleven months of 1925 was $14,948,867, an increase of $128,166 over the similar period of 1924. The revenue from this source during the past November was $1,369,348, an increase of $28,951 over the previous November.

Total revenues for the first eleven months were $15,147,802, an increase of $132,502. Total revenues for the past November were $1,387,566, an increase of $31,246.

Net income for the first eleven months was $796,531, an increase of $36,156, or 4.76 per cent, over the similar period of 1924. The net income for November, 1925, was $91,796, an increase of $449 over November, 1924.

Sale Under Foreclosure at Kansas City Set for Jan. 4

Announcement of the postponement of the sale of the property of the Kansas City Railways, Kansas City, Mo., from Dec. 14 to Jan. 4 was made by John T. Harding, special master and commissioner in charge of the sale, after P. C. Groner, William G. Woolfolk, and A. J. Higgins, representing the Newman interests, had requested that additional time be given them because they believed they would be enabled to have the remaining first mortgage bonds and notes deposited with the reorganization committee. Before making the announcement, Mr. Harding made several futile attempts to reach Judge Kimbrough Stone of the federal court, referee, who was in St. Louis at the time.

On the day set originally for the sale, it was said 96 per cent of the first mortgage bonds and notes were on deposit with the reorganization committee headed by the Newman-Woolfolk interests, which are expected to bid in the railway.

Interborough Deficit Reduced

New York Company Which Transported 1,089,544,225 Passengers Last Year Shows Slight Gain in Net

Gross operating revenue of the Interborough Rapid Transit Company for the fiscal year 1924-1925, made public on Dec. 23, increased $645,215 compared with the fiscal year ended June 30, 1924. Non-operating income, however, was $110,562 less than during the previous year, making the net increase in revenue from all sources for the year $534,653.

OPERATING EXPENSES REDUCED

Total operating expenses, including actual maintenance expenditures in excess of contractual provisions, were $690,936 less than in the preceding year. These gains were offset, however, by increase of $536,060 in taxes and increase of $676,012 in allowances for income deductions. The net result for the year was a deficit of $345,508 after allowance for all expenditures and income deductions. This is $13,517 less than the deficit reported for the previous year.

There was an increase in the number of passengers carried for the fiscal year in question. This figure reached a total of 1,089,544,225 compared with 1,074,343,243 for the preceding year. The increase was 15,200,982—the net result of a subway gain and an elevated loss. On the subject of additional service provided during the year the report showed that 7,542,077 additional car-miles were operated.

Among the improvements to the physical plant was an alteration in the covering of platform columns at Grand Central Station which illustrates how inches count in aiding a freer movement of passengers. The original tile coverings were removed and 2-in. concrete substituted with a net saving of about 4 in. in space around each of the pillars.

In addition to sums spent for current operations of the lines, the company expended about $6,700,000 for new subway cars, additional shop and power facilities, contribution toward construction and equipment under agreement with the city.

A. W. Sperry to Survey Hartford-Springfield Road

Harrison B. Freeman, receiver for the Hartford & Springfield Street Railway, Warehouse Point, Conn., has engaged A. William Sperry, New Haven, to survey the company's property preparatory to an early move on the part of counsel for the bondholders to bring foreclosure action. This move is in line with a suggestion made some time ago by Judge Brown to Francis R. Cooley, chairman of the protective committee. The company has been in the hands of a receiver since October, 1918.

Recent changes in transportation methods have resulted in the development of a service in which twelve trolleys and fourteen buses are used. The company's franchises include territory on both sides of the Connecticut River. Receiver Freeman reports that over the past six months receipts of the company have more than covered costs, due, he believes, to the development of the company's bus business.

Proposal to Change Municipal Accounting at San Francisco

Unsatisfactory methods in accounting, particularly with regard to depreciation reserve funds, have caused a movement before the Supervisors of San Francisco, Cal., to revise procedure with the municipal railway. The present ordinance provides an 18 per cent cut from gross revenue for the depreciation fund, to be used not only for depreciation but accident and damage claims and bond redemption, but expenditures have not been confined to these purposes. At present only about $750,000 remains in the fund after withdrawals for additions and betterments and to cover operating deficits. Additions and improvements projected by supervisors would more than wipe out this $750,000.

Experts maintain that the municipal railway requirements at this time call for a depreciation reserve of $2,900,000. Had the 18 per cent fund been kept intact except for expenditures dictated by the ordinance, the fund would now be about $2,850,000.

The new proposal is to set aside a fund equal to 4 per cent of depreciable assets of the municipal road and equipment, to be determined at the end of the fiscal year, for replacements and reconstruction; yearly surpluses, if any, would be invested for the fund. In addition it is proposed to set up 2 per cent of gross annually for accident and damage claims and to allocate other necessary sums for interest and amortization of bonds. The funds would be started off with $300,000 transferred from the present depreciation fund to the new depreciation fund and $100,000 for accident and damage claims. If the Supervisors adopt the plan, their difficulties in financing improvements to which they are committed will be increased, but the municipal railway accounting will be on a sounder basis.

Loss in Toledo in November

The Community Traction Company, Toledo, Ohio, showed a net loss to its stabilizing fund of $19,952 as a result of operations in November, 1925. Revenue was $286,126, compared with $270,675 for a similar month in 1924, both being on same fare basis. In November 4,003,763 revenue passengers were carried for an average of 133,459 a day with five Sundays and a holiday cutting into the business quite heavily. The total deficit to the stabilizing fund is $258,968 plus the original $400,000 in the fund.

Street Railway Commissioner E. L. Graumlich announced that December and the first four months of the new year would probably show a surplus.

Board members approved the bill for $21,427 submitted by Prof. H. E. Riggs, who conducted the recent transit survey. This amount exceeded the $15,000 estimate made originally as the probable cost of the transit survey.

Taxes of Road in Receivership Remitted

The State Board of Control of Connecticut has voted to remit the taxes of the Danbury & Bethel Street Railway, Danbury, Conn., since the time it went into the hands of a receiver in 1917. The action is conditional, however, upon payment by the company of back taxes due prior to the receivership. These amounted to $22,377. The taxes remitted amount to $41,000.

A. W. Sperry, New Haven, consulting engineer of the company, states the company is in the hands of a receiver because, prior to the receivership, it failed to sell its service to the public. He believes that under proper management the line can be made to pay. One of the principal handicaps under which the company works is the fact that it operates between the two towns over a single-track line. The cost of laying another track now is prohibitive.

Approve Stock Program. — Stockholders of the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., approved on Dec. 21 the program recently recommended providing for an increase in the authorized capitalization from $40,000,000 to $80,000,000. The plan contemplates increasing the common stock from $20,000,000 to $40,000,000 and reducing the par value from $100 to $20. It is expected additional preferred will be sold to investors over the counter.

Profit in November.—The Des Moines City Railway, Des Moines, Iowa, showed a profit of $11,954 in November, bringing the deficit of the stabilizing fund to $50,868. November was the second month the 10-cent fare was effective and the second month in which revenues have exceeded expenditures. The number of passengers carried in November was 2,102,982 and passenger revenue $198,114, with operating expenses, depreciation and other charges amounting to $155,869.

Surplus $31,234.—The operating revenue of the Philadelphia Rapid Transit System, Philadelphia, Pa., for the month of November, 1925, was $4,353,335, with operation and taxes of $3,238,853. The surplus for the month was $31,234. The total passenger revenue for the month was $4,294,090. Of that amount $4,157,035 was derived from surface, subway and elevated and $137,055 from buses. The total number of passengers carried was 79,464,368, with 77,991,108, surface, subway and elevated passengers and 1,473,260 bus passengers.

Purchase of Philadelphia Taxis Approved by Council

Purchase of the Yellow Taxi Company by the Philadelphia Rapid Transit Company, Philadelphia, Pa., was authorized on Dec. 29 by the Council transportation committee's approval by a nine to one vote of an ordinance which enables the transit company to increase its capital stock by $5,000,000 and thus finance the buying of taxicabs. The taxicab project in Philadelphia by the P.R.T. has been followed closely in these pages.

Personal Items

J. M. Bamberger Heads Terminal Company

Julian M. Bamberger, president of the Bamberger Electric Railway, Salt Lake City, Utah, has been elected president and director of the Salt Lake Terminal Company. Other officers named are William Story, Jr., vice-president and director; Henry I. Moore, one of the receivers of the Salt Lake & Utah Railroad (Orem line), secretary-treasurer and director, and Frank Orem, assistant secretary. Other directors elected were A. B. Irvine, U. L. Balser and D. P. Abercrombie.

N. S. Wiltsie, general superintendent of the Bamberger Electric, has been elected general manager of the terminal company.

The reorganization was necessitated by the receivership of the Salt Lake & Utah Railroad. Mr. Bamberger succeeds Chapin A. Day, Ogden, as president. Mr. Day and Mr. Orem are the retiring members of the board of directors. The Salt Lake Terminal Company operates the terminal facilities in Salt Lake City for the Bamberger Electric and Salt Lake & Utah.

C. W. Stocks Heads Bus Association

Carl W. Stocks, editor of *Bus Transportation* and associate editor of ELECTRIC RAILWAY JOURNAL, was elected president of the New York State Motor Transportation Association, formerly known as the Auto Bus Association of New York State, at a meeting held on Dec. 22 in Syracuse. Mr. Stocks was at one time statistician of the American Electric Railway Association. When Albert S. Richey appraised the Knoxville property he became resident engineer in charge of the appraisal. His transportation experience was further augmented with long service in the operating department of the Bay State Street Railway, now the Eastern Massachusetts Street Railway.

C. M. Tew of Columbia Honored

Twenty-five years ago, or in December, 1900, Charles Matthews Tew, then a young man, entered the employ of the Columbia Electric Street Railway, Light & Power Company, Columbia, S. C., as a bookkeeper. A few days ago Mr. Tew was the guest of honor at a luncheon held at the Jefferson Hotel, Columbia, by officials and employees of the Broad River Power Company in celebration of the completion of a service with one concern extending over a quarter of a century.

True it is that the old Columbia Electric Street Railway, Light & Power Company, of which W. B. Smith Whaley was president, passed out of existence in 1911 when the name of the concern was changed to the Columbia Railway, Gas & Electric Company, but through the changes of name and ownership Mr. Tew has held his place, his value as an employee being appreciated by incoming as well as outgoing administrations. At present he is paymaster of the company, now owned by the Barstow interests.

Mr. Tew was at first bookkeeper and later was made treasurer of the company. After E. W. Robertson secured control, Mr. Tew filled the position of auditor and so remained until September, 1924, when the Barstow interests bought the company.

E. J. Burns with Beeler Organization

Edward J. Burns, who resigned as assistant general manager of the San Diego Electric Railway, San Diego, Cal., during the summer of the present year, has become affiliated with the Beeler organization in New York City.

Edward J. Burns

The addition of this persistent and efficient railway worker to the staff of such well known engineers and consultants will undoubtedly work to the mutual advantage of both employer and employee. Mr. Burns' name is indelibly written with that of Mr. Claus Spreckels in the rehabilitation of the San Diego property, following the disturbing war-time days. The results of the combined efforts of these men have been realized to the fullest extent in that city.

Mr. Burns, known as Ed Burns, started his career at the age of 14 as call boy on a steam railroad. He went through the shops and other mechanical departments and then entered electric railway work with the Utah Light & Railroad Company in Salt Lake City. Later he went to the Key Route at Oakland, Cal. Following this work he was employed with the bureau of finance of the California Railroad Commission. Mr. Burns did not confine his activities to electric railway work for he next went with the San Diego & Southeastern Railway, a steam line, as manager, later absorbed by the San Diego & Arizona Railway. It was while he was on this property that he first attracted the notice of the Spreckels interests, which resulted in the Spreckels-Burns combination, whose accomplishments have become well known on the Pacific Coast and elsewhere. In San Diego they not only tried train operation and the weekly pass, but they secured a modification of the franchise exempting the company from paving and other expenses. They built the new La Jolla line to the beach at a cost of $2,000,000 and made San Diego the first street railway on the coast to make use of the motor bus. In addition they increased the good will of the company as well as the actual earnings. When Mr. Burns resigned at San Diego recently it was said there was a possibility of his going to the East, but the decision to settle in New York was not made until a few days ago.

J. B. Eastman became chairman of the Interstate Commerce Commission on Jan. 1 under the rule of rotation by which the position is filled from among the commission members. Mr. Eastman was formerly a member of the Massachusetts Public Service Commission. He was appointed to the federal body by former President Wilson.

John T. Harrington, president of the Pennsylvania-Ohio Electric Company, Youngstown, Ohio, was elected president of the Trumbull Steel Company, Youngstown, on Dec. 16 at a reorganization meeting of directors. Philip Wick of Youngstown has been president temporarily following the resignation of Jonathan Warner. Mr. Harrington's election as president of the Trumbull Steel Company in no way affects his connection with the Pennsylvania & Ohio Electric, of which he continues as president.

William Whiteford, assistant to the vice-president of the Twin City Rapid Transit Company, Minneapolis, Minn., has resigned, effective on Dec. 31, to become associated with the International Motor Truck Company at its new Northwest branch in St. Paul. Mr. Whiteford entered the employ of the transit company about twenty years ago as a clerk. Later he became general storekeeper and purchasing agent. Of late he has assisted Vice-President McGill in operation of the lines.

Alexander Shapiro, commercial manager of the Wisconsin Motor Bus Lines, affiliated with the Milwaukee Electric Railway & Light Company, Milwaukee, Wis., has gone to Washington, D. C., to make a survey of the lines of the Washington Rapid Transit Company, operating buses in Washington, D. C., recently taken over by the North American Company, which controls both the Milwaukee properties and the Washington Railway & Electric Company. Mr. Shapiro is well known in the electric railway field through his long association with the North American Company and the American Electric Railway Association, of which he was statistician. It is understood that for the time being at least he will be acting manager of the bus company in Washington. H. H. England, former

general manager of the Washington Rapid Transit Company, will act as assistant general manager.

Manfred K. Toeppen has resigned from the position of chief engineer of the Michigan Public Utilities Commission. He has opened offices in Detroit, where he will engage in consulting engineering.

Miss Lois Anderson has been appointed supervisor of service of the Interstate Public Service Company, Indianapolis, Ind., reporting to Harry Reid president. Her duties will include inspection trips on the railway and like visits to local offices. About a year and a half ago Miss Anderson accepted the position of assistant to the director of public relations in the company's office in Indianapolis.

Obituary

M. W. Flanigan

Mortimer William Flanigan, one of the best known electric railway men in western Pennsylvania, died on Dec. 12 from lobar pneumonia. Mr. Flanigan, superintendent of the north side division of the Pittsburgh Railways, was familiar to thousands of north side car riders. Born in Renovo, Pa., on Nov. 25, 1879, he went to Pittsburgh in 1899, relinquishing his office as general manager of the Westmoreland Railways in Derry, Pa., and becoming a division superintendent in Pittsburgh. He was a nephew of the late John Murphy, once general manager at Pittsburgh.

L. H. Griffith

Luther Henry Griffith of Seattle, Wash., one of the organizers of the West Street, Lake Union & Park Transit Company, which consolidated with the Seattle Street Railway and later became the Seattle Electric Railway & Power Company, died suddenly in Seattle on Dec. 14. Mr. Griffith was associated with many of the important industries in the upbuilding of Seattle, including the Green Lake Railway & Power Company, and the plan of connecting Lakes Union and Washington with Puget Sound by a maritime ship canal. He was head of a $1,500,000 enterprise that built the electric line from Seattle to Tacoma in 1891 and promoted the Seattle Railway, opened in 1889. Other notable achievements of Mr. Griffith included the construction of the first electric line in Guatemala, construction of the first electric plant in Blaine, organization of the Seattle National Bank and the Boston & Alaska Transportation Company. Mr. Griffith was born in August, 1861. He completed his education at Cornell College in 1883. He settled in Seattle in 1886.

Allan B. Smythe, superintendent of police of the International Railway, Buffalo, N. Y., is dead. Mr. Smythe was instrumental in bringing about the arrest and conviction of members of the Amalgamated who dynamited the Niagara Falls high-speed line train during the last strike. For several years he was employed by the Philadelphia Rapid Transit Company.

Manufactures and the Markets

News of and for Manufacturers—Market and Trade Conditions
A Department Open to Railways and Manufacturers
for Discussion of Manufacturing and Sales Matters

"1926 as I See It"

Various Manufacturers Whose Names Are Withheld Express Briefly Their Hopes and Fears for the New Year

Predictions for the future are particularly interesting when given by men of high standing in the industry which they represent. The following statements, gleaned from manufacturers who are closely in touch with the electric railway industry, should prove of value, even though the actual sources of the information are not made known. In each case the manufacturer was asked to state briefly his expectations for 1926, at least so far as his product was affected by the electric railway industry. The lines covered are thought to be sufficiently varied to give some definite impression of economic prospects for the present year.

Manufacturer of Steel Rails.—"The excellent condition which has been prevalent in the steel industry during 1925 will, in all probability, continue at least through the first half of the present year. Unfilled orders continue at a high total, considerable maintenance and extension work on steam and electric roads is in prospect, and the industry as a whole is expected to respond to the general economic stimulus which reached a peak during the past year."

Manufacturer of Trolley Wire.—"We are not looking for an exceptional year in 1926. With the exception of certain proposed electrification projects in steam railroads, little extension work is in prospect at present. Copper will probably not exceed 15 cents per pound—the figure upon which we have calculated our selling budget—for the major portion of the year."

Car Manufacturer.—"Present indications are that car orders through 1926 will not decrease over the past year, at least so far as the electric railways are concerned. Any falling off in orders which may occur, however, will probably not manifest itself until late spring or early summer, as the industry is assured of a certain amount of activity following the publication of annual budget reports."

Bus Manufacturer.—"A year of continued expansion, increased production and new developments in bus design is our forecast for 1926. Many additions to existing operating fleets are contemplated and, in addition, numerous other railways are considering the advisability of supplementing their trolley service with co-ordinated bus operation."

Ticket Manufacturer.—"The year 1926 should prove a fairly good one for our industry. With economic prosperity the number of people riding on various transportation agencies increases. Naturally this stimulates the use of transfers and tickets. It is interesting to note, however, that the demand for theater tickets is inversely proportional to employment, so that this phase of our business is just now subject to a certain slackening off."

Manufacturer of Car Fittings.—"The electric railways are apparently not due to suffer very severely from 'growing pains' during 1926. Few orders have been received from these sources in recent months, and this year will probably not herald many large additions to rolling stock. Steam railroads are showing more activity in this direction. Recent developments have shown that the lull in orders experienced a few months ago was merely a temporary condition."

Record-Breaking Order

Yellow Coach Company Designated to Supply 333 Gas-Electric Buses for Public Service Company

More than $3,000,000 will be spent all in one lump by the Public Service Transportation Company of Newark, N. J. This has been set aside for the purchase of 333 gas-electric 29-passenger motor buses. The new equipment will be obtained from the Yellow Truck & Coach Manufacturing Company of Chicago. It was stated by J. A. Ritchie, president of the Yellow Coach company, that this is the largest single order ever written for automotive units.

Decision to make this material addition to the bus equipment of the transportation company was announced on Dec. 24, but the manufacturer to whom the contract would be given had not been determined at that time. Several days later the transportation officials announced their choice of the Yellow Coach company and stated that delivery of the new equipment would begin in February and would continue at the rate of approximately 100 a month until the order was completed.

Electrical equipment for the new buses will be supplied by the General Electric Company and will be sent directly to the Chicago plant of Yellow Coach, to be there incorporated into the units. The possibility was suggested that some of the bodies might be built in the Plank Road shops of the Public Service company in order to facilitate the placing of the buses in service.

The new equipment, together with Yellow buses now operated by the Transportation company, will constitute a fleet of 411 units of this manufacture. During the past 2½ years the company has expanded its service through the purchase of independent operations and the installation of new routes until its fleet today numbers 800 buses. Many of the miscellaneous and obsolete units have been scrapped, to be replaced with modern equipment,

U. OF I.
LIBRARY

and it is expected that the entire fleet will be standardized before long. The New Jersey company is the largest operator of motor buses in the country at the present time.

American Creosote Works Gets Norfolk Plant

American Creosote Works, New Orleans, La., has announced the completion of its plans to purchase the Atlantic Creosoting & Wood Preserving Works at Norfolk, Va. A large water-front property fronting on deep water and adjacent to the Portsmouth Navy Yards has been acquired and it is now proposed to erect a large and modern creosoting plant to take care of expanding Eastern business.

W. H. Wales, formerly president of the Atlantic Creosoting & Wood Preserving Works, will be in charge and the entire personnel of the two companies will be retained. The new plant will be operated under the management of the Savannah Creosoting Company, a connection of the American Creosote Works.

Snapshots of Industry in 1925

In Which Are Portrayed the Outstanding Features of the Manufacturing Year, With Particular Reference to Certain Industries Producing Materials and Supplies for Electric Railway Consumption

GENERALLY stabilized prices throughout a year of moderate purchasing with most of the operating companies holding to the even tenor of their ways but with an occasional large order causing manufacturers to sit up and take notice—that, in brief, was 1925, so far as makers of electric railway equipment were concerned. The trend of prices was, for the most part, gradually downward, although certain materials advanced slightly in response to localized conditions. Little of the general economic stimulus prevalent in industry as a whole made itself felt among producers of equipment and materials whose consumption was limited solely to electric railways.

Leaving this specialized field for a moment, however, and considering the economic condition of the country as a whole, it becomes apparent that the year which has just come to a close was a truly noteworthy one from the standpoint of general industrial prosperity. Business was far more active than at the close of 1924 and although the gains in most lines have not been striking, they have been fairly regular. Agriculturally, the country falls considerably short of being as prosperous as it might be, but other than in the farming districts, production, distribution, employment of labor, clearing of bank checks, and other recognized trade indexes, show an accelerated progress that has brought about an upswing of buying in almost every important industry of the nation.

Despite financial and political uncertainty existing in various other countries, the foreign trade of the United States for the first three-quarters of 1925 exceeded in value that of any full year prior to the war year of 1916. The total trade for 1925 will surpass the trade of any year excepting only 1917, 1918, 1919 and 1920. Considerable electric railway and bus equipment was exported, particularly to the Orient and to South America, although the competition with European manufacturers is becoming an increasingly serious problem.

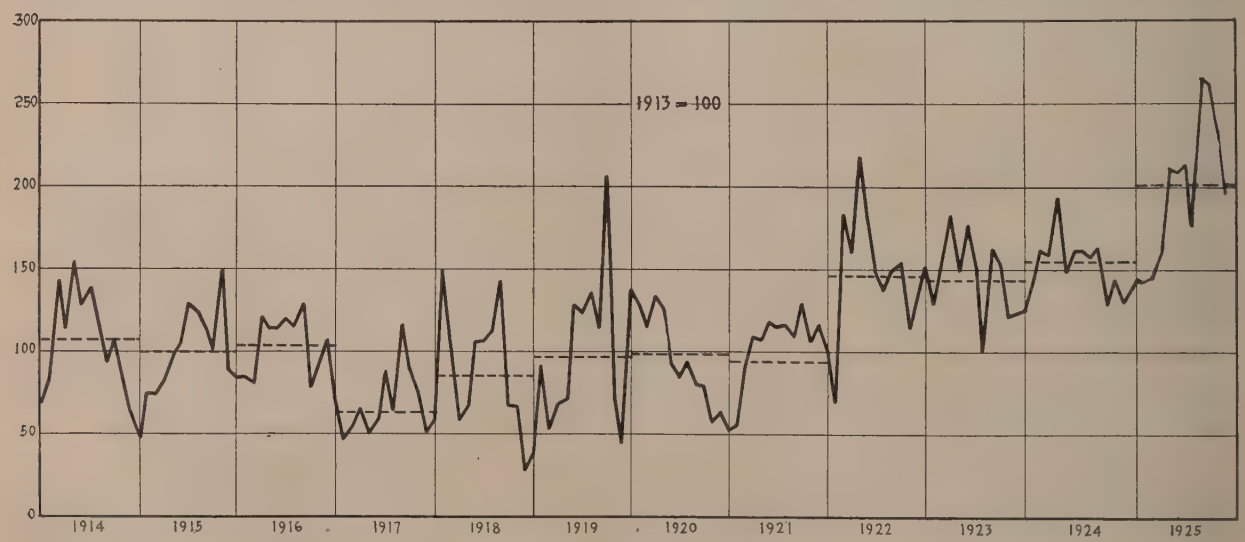
Copper—Even with fluctuating foreign markets, causing a material slump in copper exports, this industry reported a better record in 1925 than was obtained during the year previous. Inasmuch as production in 1924 broke all former records save those made under abnormal war conditions, this achievement takes on added importance. The explanation lies in an assiduous cultivation of the domestic market by the producing companies and in increased efficiency of output and handling.

The manufacture of trolley wire has not touched abnormal heights, however. A keen degree of competition, a policy of watchful waiting and of slow buying among electric railways, and a not too rapid rate of electrification activity on the part of steam roads, have rather held production within well defined bounds.

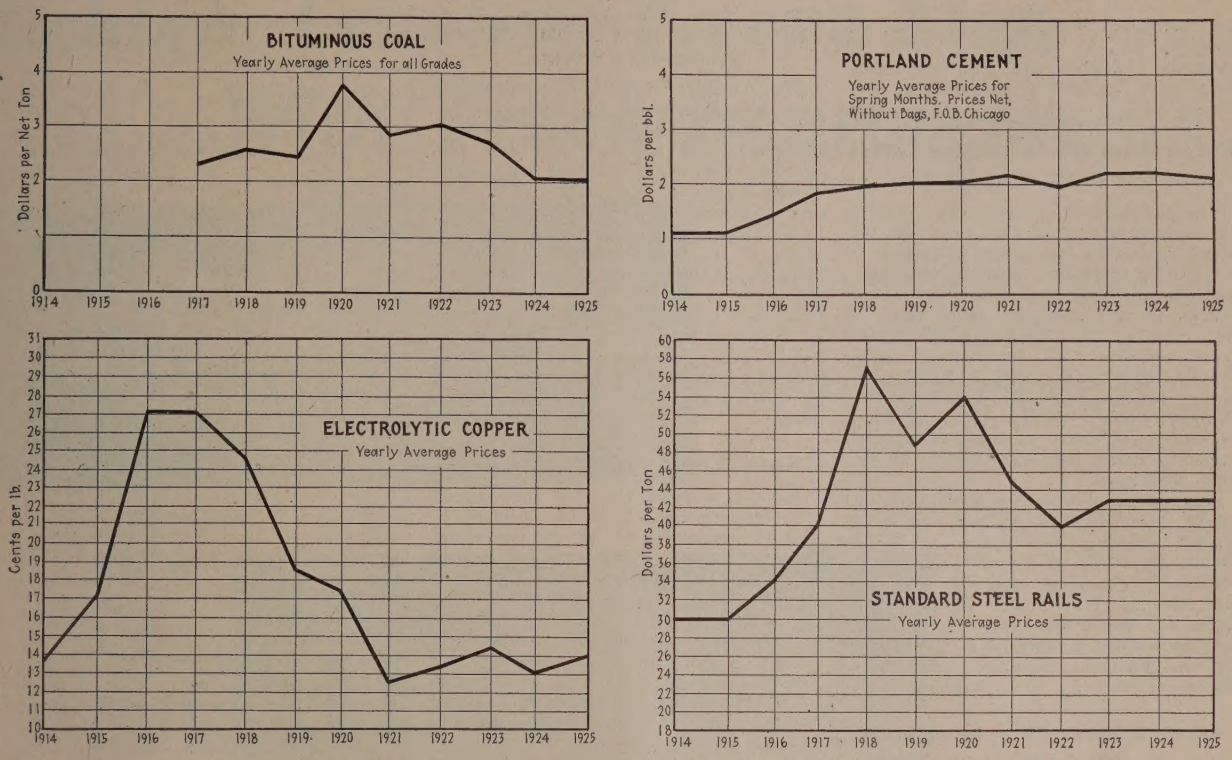
Cars—A complete review of car manufacturing operations is given elsewhere in this issue. It is not necessary to recapitulate the information here. Suffice to say that but 1,612 cars were purchased by the industry throughout the year, most of the operating companies preferring to "sit tight" and keep outlays for new rolling stock to a minimum.

Steel and Iron—It is here perhaps that the general conditions of prosperity, current in the country throughout 1925, are better exemplified than in any other industry closely affiliated with the electric railway field. After a year of well-sustained and well-balanced activity, the iron and steel producers are in an agreeably strong position. Production of pig iron in the first eleven months of the year reached a total of 33,145,498 tons, as compared with 28,146,600 tons in the corresponding period of the preceding year. Steel ingot output in the same period is estimated at 40,211,069 tons, which compares with 33,241,906 tons in 1924. These totals show gains of 18 per cent in the output of pig iron and 21 per cent in steel ingot production. While prices have remained at a moderate level, reports of the leading companies clearly indicate that the industry as a whole will be able to report a fairly prosperous year.

As reported in the ELECTRIC RAILWAY JOURNAL for Dec. 19, the production of steel rails is one of the most important factors in the iron and steel industry, and it is the total of unreported orders for this material which makes it



General Construction Volume Index Curve Showing Response Made by All Types of Building Activity to Economic Prosperity


BITUMINOUS COAL
Yearly Average Prices for all Grades
Dollars per Net Ton
PORTLAND CEMENT
Yearly Average Prices for Spring Months. Prices Net, Without Bags, F.O.B. Chicago
Dollars per bbl.
ELECTROLYTIC COPPER
Yearly Average Prices
Cents per lb.
STANDARD STEEL RAILS
Yearly Average Prices
Dollars per Ton
1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925

Representative Prices Indicated Over a Period of Years. Note Practical Absence of Fluctuation in 1925

impossible to determine the exact degree to which production during 1925 exceeded all records previously established. The Department of Labor states that practically all mills in steel centers have been operated on satisfactory schedules for the past month.

Electrical Equipment.—Demands for new equipment during 1925 have led prominent manufacturers in this field to believe that conditions are slowly improving in the electric and steam railway fields. Considerable sums have been expended in this direction for maintenance work and for bringing out-of-date and unsatisfactory equipment to a point somewhere approaching modern efficiency.

Particularly noteworthy has been the enthusiasm manifested in oil-electric motive power. Several steam roads have purchased oil electric engines and the New York Central is planning to try out an oil-electric articulated car on some of its branch lines. New developments have also been made in power plant equipment, automatic railway substations, and in general operating equipment.

Buses—A considerable momentum of production has been built up in the automotive field since the depression of last summer, and it is expected that this will tend to keep business active in this industry during at least the first part of 1926. Conditions are in a healthy state of balance at present; employment is large, prices relatively stable, and transportation facilities are ample and efficiently operated. Credit conditions in this field are said to be exceptionally sound and with the careful control of production which is now the rule, the expectation of active spring and early summer business seems to be justified, barring, of course, unforeseen industrial disturbances of an inclusive nature.

A number of important mergers occurred in the bus manufacturing field during 1925, notably that involving the Yellow Coach Manufacturing Company with the General Motors Corporation and that of Graham Brothers with Dodge Brothers. Much attention has been given to the encouragement of coordinated bus and trolley service as a part of operating companies. The increased interest shown in gas-electric bus development has led many companies to add large numbers of these units to their fleets.

Tires—Plans are at present taking shape to break the British monopoly on rubber. The 50 per cent increase in tire prices made during the past year is due almost entirely to the exorbitant rate charged for crude rubber. In fact the price of the crude materials increased nearly 400 per cent over a period of about twelve months, and the retail prices of tires were only held down, partly by increased production efficiency and partly because early in the year tire makers worked on the basis of comparatively cheap rubber, contracted for during the fall of 1924. The rather startling total of $700,000,000 is being taken in annually over and above what the British themselves agree would be a fair price. As long as the monopoly continues little relief can be expected, according to various authorities in the field.

Coal—Considerable stimulus has been given the bituminous coal industry of late due to the "bitter end" aspect of the anthracite strike. In consequence, fairly heavy buying has resulted and the prices of most of the grades have advanced slightly in the past few weeks. Several soft coal mines, previously closed, have been reopened to help meet the increased demands, and a consequent increase in employment has manifested itself in the bituminous region. The average yearly price for all grades during 1925, however, was slightly less than that of the previous year.

General Construction—As illustrated in the accompanying construction volume index curve, the mean of construction for 1925 shows an important rise over that of the years immediately preceding it. This curve may be accepted as a reliable index of construction trend, since it is based on comprehensive reports embracing every type of industrial and commercial construction work.

Safeguard for Magnetic Flagman

Characterized as the most recent contribution to the field of adequate crossing protection, the "Out of Order" signal is prominently featured in a recent catalog issued by the Magnetic Signal Company, Los Angeles, Cal. The manufacturers of the "Magnetic Flagman," which has been adopted as standard on a large number of steam and electric roads throughout the country, have been devoting considerable attention recently to the problem of obviating any dangers which might result from operating failures. That the automatic out-of-order signal meets this need has been satisfactorily demonstrated by the engineers of the company.

The catalog itself is very attractively arranged. Many interesting pictures and diagrams are included to clarify

the printed descriptions. Detailed specifications of the various types of magnetic flagmen are presented and their most important applications discussed.

Dodge Brothers Increasing Factor in Bus Field with Merger

Dodge Brothers' position and lead in the commercial car field was further strengthened by the recent acquision of a majority interest in Graham Brothers, largest exclusive producers of motor trucks in the country. More than 20 per cent of the combined production now consists of commercial cars, trucks, buses and chassis. Plant additions totaling about $8,000,000 as financed out of surplus are expected to be completed early in 1926, production capacity being increased nearly 50 per cent thereby.

This large increase in production will make possible the reduced scale of prices recently announced by Dodge Brothers. With a month's production still to be reported, sales for last year are already 17,000 cars in excess of sales for the entire year of 1924 and are the largest heretofore in the history of the business, according to official figures issued by the company.

Electrification Recommended as Aid to Farmers

How can the great triumvirate of manufacturers, transportation agencies and farmers work together to further their individual and mutual interests? This important question was discussed in detail at the annual banquet of the Illinois Manufacturers' Association held at the Hotel LaSalle, Chicago, on Dec. 9. Gerard Swope, president of the General Electric Company, spoke for the manufacturers; W. R. Cole, president of the Nashville, Chattanooga & St. Louis Railroad, represented the transportation field; while the agricultural interests were upheld by Eugene D. Funk, Bloomington, president of the American Seed Trade Association.

Mr. Swope advocated a greater development of electric power for the benefit of the three industries. He said that better power development in the United States must be had if the country is to maintain its position of leadership. Adding that the marketing of their products was the greatest problem before farmers, he declared that power development would prove of particular aid to the rural districts. Electrification would give the farmer a larger proportion of the amount for which the goods are sold to the consumer by increasing output and decreasing production expenses.

Mr. Cole, speaking for transportation, declared that, while the railroads were sympathetic with the efforts of the farmers to meet their various pressing needs, the present transportation costs are justly apportioned and are not to be blamed for the depressed condition of agriculture.

Mr. Funk, representing the farmers, voiced the opinion that the future of Middle West farmers is black unless something besides temporary solutions are found for the various agricultural difficulties.

American Car & Foundry Enters Automotive Field

The American Car & Foundry Company has announced the formation of the American Car & Foundry Motors Company, this marking the first important entry by a railroad equipment company into the automotive field. The new company, which was incorporated in Delaware, will own a controlling interest in the Fageol Motors Company of Ohio, manufacturer of buses and trucks, and in the Hall-Scott Motor Company of Oakland, Cal., manufacturer of gasoline engines for motor trucks, airplanes and motor boats. The new company in turn will be controlled by the American Car & Foundry Company.

Colonel Ayres Says What's What

Here is a prediction for 1926 which isn't anonymous. It is by Leonard P. Ayres, vice-president of the Cleveland Trust Company and an economist nationally known. His views appeared in the Cleveland *Plain Dealer*, following a speech made before the Chamber of Commerce on Dec. 15. He annually addresses the chamber on his forecasts for the coming year. It was found, upon checking his statements made a year ago concerning 1925, that they had generally proved correct.

A year of prosperity reaching its highest speed in late summer and then slowing up.

Building construction rising to a new high record in the spring and then starting downward.

Building costs remaining high—proportionately higher for labor than for materials.

Iron and steel produced in even greater volume than in 1925, mainly on account of the demands of railroads.

An automobile production of about 4,000,000.

The bull market on the stock exchange continuing until early next year, when the New York Federal Reserve Bank raises its rate and precipitates a "wave of fear."

Rising wages, rising costs of living, narrowing profit margins, higher wholesale and retail prices and a volume of industrial employment coming to a peak and turning down.

Rolling Stock

Scranton Railway, Scranton, Pa., it is reported, plans to purchase additional one-man cars.

Durham Public Service Company, Durham, N. C., has placed an order with the Reo Motor Car Company for eight buses of 21 passenger capacity.

Metal, Coal and Material Prices

Metals—New York	Dec. 30, 1925
Copper, electrolytic, cents per lb	14.125
Copper wire base, cents per lb	16.00
Lead, cents per lb	9.25
Zinc, cents per lb	8.96
Tin, Straits, cents per lb	63.375
Bituminous Coal f.o.b. Mines	
Smokeless mine run, f.o.b. vessel, Hampton Roads, gross tons	$5.00
Somerset mine run, Boston, net tons	2.075
Pittsburgh mine run, Pittsburgh, net tons	2.05
Franklin, Ill., screenings, Chicago, net tons	1.875
Central, Ill., screenings, Chicago, net tons	1.425
Kansas screenings, Kansas City, net tons	2.30
Materials	
Rubber-covered wire, N. Y., No. 14, per 1,000 ft	$7.00
Weatherproof wire base, N. Y., cents per lb	18.25
Cement, Chicago net prices, without bags	2.10
Linseed oil (5-bbl. lots), N. Y., per gal	0.95
White lead in oil (100-lb. keg), N. Y., cents per lb	0.1550
Turpentine (bbl. lots), N. Y., per gal	$0.99

Miami Beach Railway, Miami, Fla., recently received twelve new cars. The specifications follow:

Date order was placed	July 24, 1925
Date of delivery	October
Builder of car body	Perley A. Thomas Car Works
Type of car	Light-weight, double-truck, one-man safety
Seating capacity	48
Total weight	36,000 lb.
Bolster centers, length	20 ft. 0 in.
Length over all	45 ft. 9 in.
Width over all	8 ft. 4½ in.
Height, rail to trolley base	10 ft. 11 in.
Body	All steel
Interior trim	Cherry
Headlining	¼-in. Agasote
Roof	Arch
Air brakes	General Electric
Bumpers	Channel
Car signal system	Electric Service Supplies Company
Compressors	General Electric
Control	K-35
Curtain fixtures	Curtain Supply Company
Destination signs	Hunter
Door-operating mechanism	National Pneumatic
Fenders	Consolidated
Finish	Varnish
Gears and pinions	General Electric
Hand brakes	National Brake Company
Headlights	General Electric
Lightning arresters	General Electric
Motors	Four GE-265, 35 hp.
Registers	International
Sanders	Ohio Brass
Sash fixtures	O. M. Edwards
Seats	Hale & Kilburn
Seating material	Wood slat
Slack adjuster	American Brake Company
Step treads	American Abrasive Company
Trolley retrievers	Chas. I. Earll
Trolley base	Ohio Brass, Form 4
Trucks	Brill, 76-E-1
Ventilators	Railway Utility Company
Wheels	Pollak Steel Company 26-in.

Trade Notes

T. D. Owler has been appointed railway sales representative at Chicago, for the Heywood-Wakefield Company, New York. He will take up his new duties after Jan. 1, following the retirement of Edward Buker, his former chief, who is going into business for himself.

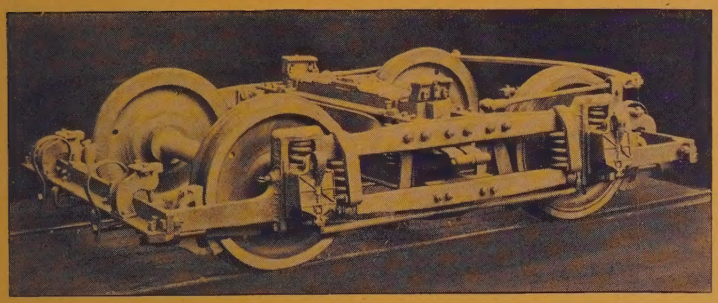
Erie Electrical Equipment Company has announced the appointment of the Universal Electric Sales Corporation with offices at 30 Church Street, New York; 11 Beacon Street, Boston, and 332 Healy Building, Atlanta, Ga., to represent it in the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, Eastern Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee and Alabama.

Fageol Company, Kent, Ohio, shipped five new buses to the Jacksonville Traction Company, Jacksonville, Fla., during the first half of December. The railway is under the executive management of Stone & Webster, New York. It will use the new units in its program of bus and trolley service co-ordination.

W. J. Nugent, vice-president and general manager of the Nugent Steel Castings Company, Chicago, has been elected president to succeed Charles Piez. Prentiss Coonley has been elected vice president and C. A. MacDonald, secretary, has been elected to fill a vacancy on the board of directors. Mr. Nugent has been associated with the company since 1918. The interests of Mr. Piez have been taken over by Mr. Nugent and others. The company was organized in 1916.

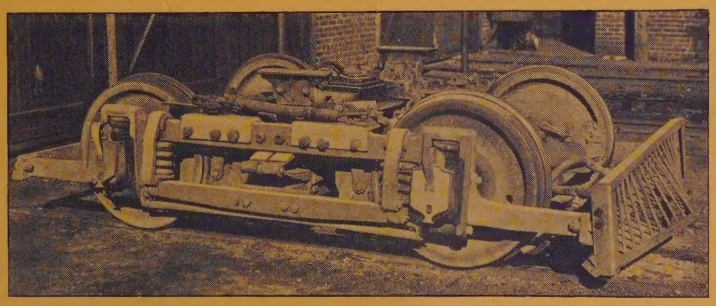
Lehigh Traction Keeps Step With Truck Improvements

1.



After nineteen years you wouldn't think it the same truck

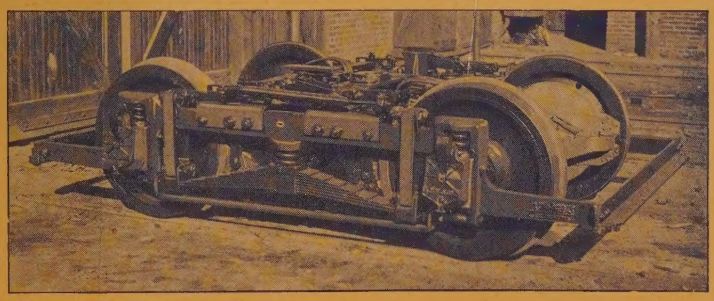
2.



The first step—

was taken two years ago after this Brill 27-E type truck had been in service 17 years. The brake rigging was changed to the inside-hung type with Brill Half-ball Brake Hangers, affecting a saving of 250 lb. per truck in weight.

3.



Reduces Truck Weight

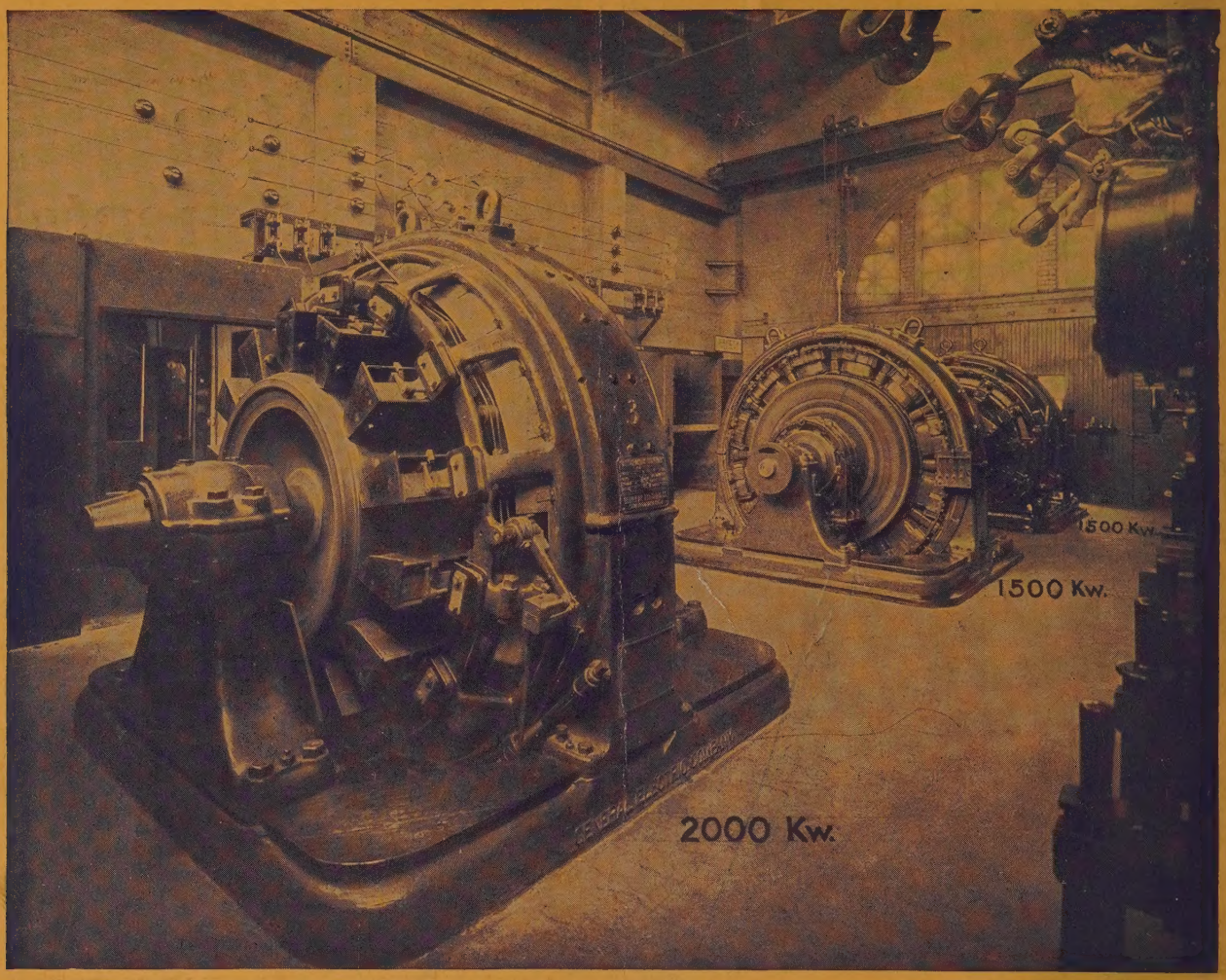
700 lb. or 1400 lb. per car, besides modernizing truck equipment and improving service.

And now—

other improvements have just been completed, involving steel type bolster, Brill Bolster Guides, Semi-elliptic Springs and Brill Twin Links with the Brill Graduated Spring System in place of the full-elliptic type springs, resulting in an additional saving of 450 lb. per truck.

THE J. G. BRILL COMPANY
PHILADELPHIA, PA.

AMERICAN CAR CO. ST. LOUIS MO. — G.C. KUHLMAN CAR CO. CLEVELAND, OHIO. — WASON MANF'G CO. SPRINGFIELD, MASS.



Reliable power back of San Francisco trolleys

The largest converter capacity under one roof on the Pacific Coast is in this substation of the Market Street Railway, at 8th Avenue and Geary Streets, San Francisco. The 2000-kw. unit, incorporating the new features of G-E design, was added to the installation in 1923 after the two 1500-kw. units had been in continuous operation for nine years.

G-E Railway Synchronous Converters are being preferred by railway engineers particularly because of two important features:

RADIAL TYPE BRUSH RIGGING gives maximum space between brush-holders and eliminates all overhanging parts. Where arcs might form, the exposed parts are protected by arc-resistant material.

HIGH-RELUCTANCE COMMUTATING POLES maintain the proper flux to insure commutation under severe load conditions. They enable the converter to withstand many disturbances and prevent service interruption.

3-11

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN ALL PRINCIPAL CITIE